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(FILE 'HOME' ENTERED AT 14:54:42 ON 06 DEC 2004)

FILE 'HCAPLUS' ENTERED AT 14:54:47 ON 06 DEC 2004

L1 1 US20040063650/PN
E JP2002-282874/APPS
L2 1 JP2002-282874/APPS
L3 1 L1-2

FILE 'REGISTRY' ENTERED AT 14:55:23 ON 06 DEC 2004

FILE 'HCAPLUS' ENTERED AT 14:55:25 ON 06 DEC 2004
L4 TRA L3 1- RN : 5 TERMS

FILE 'REGISTRY' ENTERED AT 14:55:25 ON 06 DEC 2004

L5 5 SEA L4

FILE 'WPI(X)' ENTERED AT 14:55:28 ON 06 DEC 2004

L6 1 US20040063650/PN
L7 1 JP2002-282874/AP, PRN
L8 1 06-7

=> b hcap

FILE 'HCAPLUS' ENTERED AT 14:56:06 ON 06 DEC 2004

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FILE COVERS 1907 - 6 Dec 2004 VOL 141 ISS 24
FILE LAST UPDATED: 5 Dec 2004 (20041205/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all 13

L3 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:269858 HCAPLUS
DN 140:287102
ED Entered STN: 02 Apr 2004
TI Method for producing 3-methylthiopropanal from acrolein and methyl mercaptan
IN Shiozaki, Tetsuya; Haga, Toru
PA Sumitomo Chemical Company, Limited, Japan
SO U.S. Pat. Appl. Publ., 4 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C07C323-22
NCL 514041000
CC 23-14 (Aliphatic Compounds)
Section cross-reference(s): 45

FAN.CNT 1	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004063650	A1	20040401	US 2003-6650063	20030922 <-
	JP 2004115461	A2	20040415	JP 2002-282874	20020927 <-
	EP 1408029	A1	20040414	EP 2003-211924	20030924 <-
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
PRAI JP	JP 2002-282874	A	20020927		<-

CLASS
PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

US 2004063650 ICM C07C323-22
 NCL 514041000

JP 2004115461 FTERM 4H006/AA02; 4H006/AC63; 4H006/BA32; 4H006/BA50;
 4H006/BA51; 4H006/TA04; 4H006/TB56; 4H039/CA80;
 4H039/CF10

OS CASREACT 140:287102

AB 3-Methylthiopropanal is produced in high yield and selectivity by supplying acrolein and Me mercaptan together or sequentially with an acidic compound (e.g., acetic acid) and a basic compound (e.g., pyridine) into a reaction system to react the acrolein with the Me mercaptan, where the basic compound is used in an amount of about 0.3 mol or less per mol of the acidic compound

ST methylthiopropanal manuf acrolein reaction methyl mercaptan

IT Thioethers
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (3-methylthiopropanal; method for producing 3-methylthiopropanal from acrolein and Me mercaptan)

IT Addition reaction
 (in a method for producing 3-methylthiopropanal from acrolein and Me mercaptan)

IT Acids, uses
 Bases, uses
 RL: CAT (Catalyst use); USES (Uses)
 (in a method for producing 3-methylthiopropanal from acrolein and Me mercaptan)

IT Etherification
 (thioetherification; in a method for producing 3-methylthiopropanal from acrolein and Me mercaptan)

IT 74-93-1, Methyl mercaptan, reactions 107-02-8, Acrolein, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (method for producing 3-methylthiopropanal from acrolein and Me mercaptan)

IT 3268-49-3P, 3-Methylthiopropanal
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (method for producing 3-methylthiopropanal from acrolein and Me mercaptan)

IT 64-19-7, Acetic acid, uses 110-86-1, Pyridine, uses
 RL: CAT (Catalyst use); USES (Uses)
 (method for producing 3-methylthiopropanal from acrolein and Me mercaptan using)

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STRUCTURE FILE UPDATES: 5 DEC 2004 HIGHEST RN 792236-36-3
 DICTIONARY FILE UPDATES: 5 DEC 2004 HIGHEST RN 792236-36-3

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

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L5 ANSWER 1 OF 5 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 3268-49-3 REGISTRY
 CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Propionaldehyde, 3-(methylthio)- (6CI, 7CI, 8CI)
 OTHER NAMES:
 CN .beta.- (Methylmercapto)propionaldehyde

CN .beta.- (Methylthio)propionaldehyde
 CN .beta.- (Methylthio)propionic aldehyde
 CN 3- (Methylmercapto)propionaldehyde
 CN 3- (Methylthio)propanal
 CN 3- (Methylthio)propionaldehyde
 CN Methional
 CN NSC 15874
 FS 3D CONCORD
 MF C4 H8 O S
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS,
 BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
 CHEMINFORMRX, CHEMLIST, CHEMSAFE, CSCHEM, DIPPR*, EMBASE, HODOC*,
 IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, NAPRALERT, NIOSHTIC, RTECS*,
 SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Cplus document type: Conference; Journal; Patent; Report
 RL.P Roles from patents: BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

MeS—CH₂—CH₂—CHO

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1037 REFERENCES IN FILE CA (1907 TO DATE)
 4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 1040 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 29 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L5 ANSWER 2 OF 5 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 110-86-1 REGISTRY
 CN Pyridine (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN Azabenzeno
 CN Azine
 CN CP 32
 CN NSC 141574
 CN NSC 406123
 FS 3D CONCORD
 DR 733733-47-6, 6999-00-4, 163392-20-9, 62301-32-0, 152758-95-7, 85404-19-9,
 85404-20-2, 82005-06-9, 45410-39-7
 MF C5 H5 N
 CI COM, RPS
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS,
 BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN,
 CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU,
 DETERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2,
 ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB,
 MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS,
 RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2,
 USPATFULL, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Cplus document type: Book; Conference; Dissertation; Journal; Patent;
 Preprint; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
 FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU
 (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT
 (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical
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 (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);

PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

44587 REFERENCES IN FILE CA (1907 TO DATE)
 6335 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 44642 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 8 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L5 ANSWER 3 OF 5 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 107-02-8 REGISTRY
 CN 2-Propenal (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Acrolein (8CI)
 OTHER NAMES:
 CN 2-Propen-1-one
 CN Acrylaldehyde
 CN Acrylic aldehyde
 CN Allyl aldehyde
 CN Aqualin
 CN Magnacide B
 CN Magnacide H
 CN NSC 8819
 CN Prop-2-en-1-al
 CN Propenal
 FS 3D CONCORD
 DR 25314-61-8
 MF C3 H4 O
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS,
 BIOSIS, BIOTECHNO, CA, CABAB, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB,
 CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB,
 DDFU, DETHERM*, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT,
 ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA,
 MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS,
 RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2,
 USPATFULL, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent;
 Report

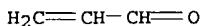
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 FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU
 (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT
 (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: ANST (Analytical
 study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU
 (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT
 (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study);
 CMBI (Combinatorial study); FORM (Formation, nonpreparative);
 MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses);
 NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical
 study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC
 (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);

PRP (Properties); RACT (Reactant or reagent); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

12004 REFERENCES IN FILE CA (1907 TO DATE)
 273 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 12014 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L5 ANSWER 4 OF 5 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 74-93-1 REGISTRY
 CN Methanethiol (8CI, 9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN Mercaptomethane
 CN Methyl mercaptan
 FS 3D CONCORD
 DR 63933-47-1
 MF C H4 S
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOPARTNERS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PIRA, PROMT, PS, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA CAplus document type: Conference; Dissertation; Journal; Patent; Preprint; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

6878 REFERENCES IN FILE CA (1907 TO DATE)
 76 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 6887 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 6 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L5 ANSWER 5 OF 5 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 64-19-7 REGISTRY
 CN Acetic acid (7CI, 8CI, 9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN acetic acid
 CN Aci-Jel
 CN E 260
 CN Ethanoic acid
 CN Ethanoic acid monomer
 CN Ethylic acid
 CN Glacial acetic acid
 CN Methanecarboxylic acid

CN NSC 111201
 CN NSC 112209
 CN NSC 115870
 CN NSC 127175
 CN NSC 132953
 CN NSC 406306
 CN Vinegar acid
 FS 3D CONCORD
 DR 77671-22-8
 MF C2 H4 O2
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS,
 BIOSIS, BIOTECHNO, CA, CABAB, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB,
 CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB,
 DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2,
 ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB,
 IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA,
 PROMT, PS, RTECS*, SPECINFO, TOXCENTER, TULSA, UOLIDAT, USAN, USPAT2,
 USPATFULL, VETU, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)

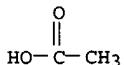
DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent;
 Preprint; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
 CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC
 (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);
 PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role
 in record)

RLD.P Roles for non-specific derivatives from patents: ANST (Analytical
 study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC
 (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);
 PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
 study); CMBI (Combinatorial study); FORM (Formation, nonpreparative);
 MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses);
 NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical
 study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC
 (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);
 PRP (Properties); RACT (Reactant or reagent); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

88553 REFERENCES IN FILE CA (1907 TO DATE)
 4572 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 88657 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> b wpix
 FILE 'WPIX' ENTERED AT 14:56:24 ON 06 DEC 2004
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FILE LAST UPDATED: 3 DEC 2004 <20041203/UP>
 MOST RECENT DERWENT UPDATE: 200477 <200477/DW>
 DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
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 GUIDES, PLEASE VISIT:
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>>> NEW! FAST-ALERTING ACCESS TO NEWLY-PUBLISHED PATENT DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX FIRST VIEW - FILE WPIFV.
FOR FURTHER DETAILS: [<<<](http://www.thomsonderwent.com/dwpifv)

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>>> SMILES and ISOSMILES strings are no longer available as Derwent Chemistry Resource display fields <<<

=> d all dea dm1

L8 ANSWER 1 OF 1 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN
AN 2004-294416 [27] WPIX
DNC C2004-112615
TI Production of 3-methylthiopropanal used as intermediate for producing methionine used as feed supplement or its hydroxy analogue, comprises supplying acrolein and methyl mercaptan with acidic and basic compounds.
DC B05 C03 D13 E17
IN HAGA, T; SHIOZAKI, T
PA (SUMO) SUMITOMO CHEM CO LTD
CYC 34
PI US 2004063650 A1 20040401 (200427)* 4 C07C323-22 <--
EP 1408029 A1 20040414 (200427) EN C07C319-18
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV
MC MK NL PT RO SE SI SK TR
JP 2004115461 A 20040415 (200427) 6 C07C319-18
CN 1496979 A 20040519 (200455) C07C323-22
ADT US 2004063650 A1 US 2003-665006 20030922; EP 1408029 A1 EP 2003-21191
20030924; JP 2004115461 A JP 2002-282874 20020927; CN 1496979 A
CN 2003-125534 20030925
PRAI JP 2002-282874 20020927
IC ICM C07C319-18; C07C323-22
AB US2004063650 A UPAB: 20040426
NOVELTY - Production of 3-methylthiopropanal comprises supplying acrolein and methyl mercaptan with acidic and basic compounds into a reaction system to react acrolein with methyl mercaptan. The basic compound is used in an amount of up to 0.3 mol/mol of the acidic compound.
USE - The method is used for preparing 3-methylthiopropanal useful as an intermediate for producing methionine as a feed supplement or its hydroxy analogue.
ADVANTAGE - High quality 3-methylthiopropanal is produced while suppressing the production of by-products having high boiling points.
Dwg. 0/0
FS CPI
FA AB; DCN
MC CPI: B10-D01; C10-D01; D03-G; D03-H01; E10-D01C; E11-H
M2 *01* DCN: RA3BU8-K; RA3BU8-P
M2 *02* DCN: R00808-K; R00808-S
M2 *03* DCN: R00332-K; R00332-S
M2 *04* DCN: R00247-K; R00247-V; R00247-U; R07345-K; R07345-V; R07345-U
M2 *05* DCN: R00916-K; R00916-V; R00916-U
M3 *01* DCN: RA3BU8-K; RA3BU8-P
M3 *02* DCN: R00808-K; R00808-S
M3 *03* DCN: R00332-K; R00332-S
M3 *04* DCN: R00247-K; R00247-V; R00247-U; R07345-K; R07345-V; R07345-U
M3 *05* DCN: R00916-K; R00916-V; R00916-U
DRN 0247-S; 0247-U; 0332-S; 0332-U; 0808-S; 0808-U; 0916-S; 0916-U

=> b home
FILE 'HOME' ENTERED AT 14:56:39 ON 06 DEC 2004

=>

=> b reg

REGISTRY ENTERED AT 15:34:32 ON 06 DEC 2004
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 provided by InfoChem.

STRUCTURE FILE UPDATES: 5 DEC 2004 HIGHEST RN 792236-36-3
 DICTIONARY FILE UPDATES: 5 DEC 2004 HIGHEST RN 792236-36-3

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when
 conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
 information enter HELP PROP at an arrow prompt in the file or refer
 to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> d file 112

L12 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 3268-49-3 REGISTRY
 CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Propionaldehyde, 3-(methylthio)- (6CI, 7CI, 8CI)
 OTHER NAMES:
 CN .beta.- (Methylmercapto)propionaldehyde
 CN .beta.- (Methylthio)propionaldehyde
 CN .beta.- (Methylthio)propionic aldehyde
 CN 3-(Methylmercapto)propionaldehyde
 CN 3-(Methylthio)propanal
 CN 3-(Methylthio)propionaldehyde
 CN Methional
 CN NSC 15874
 FS 3D CONCORD
 MF C4 H8 O S
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS,
 BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
 CHEMINFORMRX, CHEMLIST, CHEMSAFE, CSCHEM, DIPPR*, EMBASE, HODOC*,
 IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, NAPRALERT, NIOSHTIC, RTECS*,
 SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA Cplus document type: Conference; Journal; Patent; Report
 RL.P Roles from patents: BIOL (Biological study); FORM (Formation,
 nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP
 (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses);
 NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological
 study); PREP (Preparation); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
 study); CMBI (Combinatorial study); FORM (Formation, nonpreparative);
 OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties);
 RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

MeS—CH₂—CH₂—CHO

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1037 REFERENCES IN FILE CA (1907 TO DATE)
 4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 1040 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 29 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> d his

(FILE 'HOME' ENTERED AT 14:54:42 ON 06 DEC 2004)

FILE 'HCAPLUS' ENTERED AT 14:54:47 ON 06 DEC 2004

L1 1 US20040063650/PN
 E JP2002-282874/APPS
 L2 1 JP2002-282874/APPS
 L3 1 L1-2

FILE 'REGISTRY' ENTERED AT 14:55:23 ON 06 DEC 2004

L4 FILE 'HCAPLUS' ENTERED AT 14:55:25 ON 06 DEC 2004
 TRA L3 1- RN : 5 TERMS

L5 FILE 'REGISTRY' ENTERED AT 14:55:25 ON 06 DEC 2004
 5 SEA L4

FILE 'WPIX' ENTERED AT 14:55:28 ON 06 DEC 2004

L6 1 US20040063650/PN
 L7 1 JP2002-282874/AP, PRN
 L8 1 L6-7

FILE 'REGISTRY' ENTERED AT 15:06:58 ON 06 DEC 2004

L9 121 C4H8OS NOT ((PMS OR MAN OR IDS)/CI OR UNSPECIFIED OR COMPD OR C
 L10 14 L9 AND METHYLTHIO
 L11 2 L10 AND PROPIONALDEHYDE
 SEL RN 2
 L12 1 E1 AND L11

FILE 'HCAPLUS' ENTERED AT 15:10:10 ON 06 DEC 2004

L13 1324 (METHYLMERCAPTO OR METHYLTHIO) (1A) (PROPIONALDEHYDE OR PROPION
 L14 91 L13 (L) PREP+NT/RL
 E ACROLEIN/CT
 E E3+ALL

L15 12015 ACROLEIN/CT
 L16 4967 L15 (L) RACT+NT/RL
 E MERCAPTAN/CT
 E E4+ALL
 E E2
 E E3+ALL

L17 149167 "THIOLS (ORGANIC)" +OLD, NT/CT
 L18 41326 L17 (L) RACT+NT/RL
 E SHIOZAKI T/AU

L19 6 E3-4
 E SHIOZAKI TETSUYA/AU
 L20 69 E3
 E HAGA T/AU

L21 109 E3
 E HAGA TORU/AU
 L22 104 E3

L23 27489 (SUMITOMO (1A) CHEM?)/CS, PA
 L24 60 L13-14 AND L15-16 AND L17-18
 L25 1 L24 AND L19-22

L26 1 L24 AND L23
 L27 1 L25-26
 L28 59 L24 NOT L27

L29 QUE PY<=2002 OR PRY<=2002 OR AY<=2002 OR PD<20020927 OR AD<2002
 L30 59 L28 AND L29

L31 29 L14 AND L16 AND L18
 L32 1 L31 AND L19-23
 L33 28 L31 NOT L32

L34 28 L33 AND L29
 E ACIDS/CT

L35 870594 ACIDS/CW
 L36 31090 BASES/CW
 L37 4 L34 AND L35-36

L38 1 L27 OR L32

=> b hcap

~~HCAPLUS~~ ENTERED AT 15:34:53 ON 06 DEC 2004
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FILE COVERS 1907 - 6 Dec 2004 VOL 141 ISS 24
FILE LAST UPDATED: 5 Dec 2004 (20041205/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

>> @ all 138 :

L38 ANSWER 1 OF 1 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:269858 HCPLUS
 DN 140:287102
 ED Entered STN: 02 Apr 2004
 TI Method for producing 3-methylthiopropanal from acrolein and methyl mercaptan
 IN ~~Sankin, Nettaya, Heng, Teeru~~
 PA ~~Sumitomo Chemical Company, Limited, Japan~~
 SO U.S. Pat. Appl. Publ., 4 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM C07C323-22
 NCL 514041000
 CC 23-14 (Aliphatic Compounds)
 Section cross-reference(s): 45
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004063650	A1	20040401	US 2003-665006	20030922
JP 2004115461	A2	20040415	JP 2002-282874	20020927
EP 1408029	A1	20040414	EP 2003-21191	20030924
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
PRAI JP 2002-282874	A	20020927		

 CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004063650	ICM	C07C323-22
	NCL	514041000
JP 2004115461	FTERM	4H006/AA02; 4H006/AC63; 4H006/BA32; 4H006/BA50; 4H006/BA51; 4H006/TA04; 4H006/TB56; 4H039/CA80; 4H039/CF10

 OS CASREACT 140:287102
 AB 3-Methylthiopropanal is produced in high yield and selectivity by supplying acrolein and Me mercaptan together or sequentially with an acidic compound (e.g., acetic acid) and a basic compound (e.g., pyridine) into a reaction system to react the acrolein with the Me mercaptan, where the basic compound is used in an amount of about 0.3 mol or less per mol of the acidic compound
 ST methylthiopropanal manuf acrolein reaction methyl mercaptan
 IT Thioethers
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (3-methylthiopropanal; method for producing 3-methylthiopropanal from acrolein and Me mercaptan)
 IT Addition reaction
 (in a method for producing 3-methylthiopropanal from acrolein and Me mercaptan)
 IT Acids, uses
 Bases, uses
 RL: CAT (Catalyst use); USES (Uses)
 (in a method for producing 3-methylthiopropanal from acrolein and Me mercaptan)
 IT Etherification
 (thioetherification; in a method for producing 3-methylthiopropanal from acrolein and Me mercaptan)
 IT 74-93-1, Methyl mercaptan, reactions 107-02-8, Acrolein,

reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (method for producing 3-methylthiopropanal from acrolein and Me mercaptan)

IT 3268-49-3P, 3-Methylthiopropanal
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (method for producing 3-methylthiopropanal from acrolein and Me mercaptan)

IT 64-19-7, Acetic acid, uses 110-86-1, Pyridine, uses
 RL: CAT (Catalyst use); USES (Uses)
 (method for producing 3-methylthiopropanal from acrolein and Me mercaptan using)

[REDACTED]

L34 ANSWER 1 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:348011 HCPLUS
 DN 140:356948
 ED Entered STN: 29 Apr 2004
 TI Catalytic addition reaction for the production of 3-(methylthio)propanal from mercaptomethane and acrolein
 IN Rey, Patrick
 PA Adisseo France S.A.S., Fr.
 SO Eur. Pat. Appl., 10 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM C07C319-18
 ICS C07C323-22
 CC 23-14 (Aliphatic Compounds)
 Section cross-reference(s): 45, 67

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI EP 1413573	A1	20040428	EP 2002-356211	20021024 <--	
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK			
	WO 2004037774	A1	20040506	WO 2003-IB4557	20031014 <--
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRAI EP 2002-356211 A 20021024 <--
 CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1413573	ICM	C07C319-18
	ICS	C07C323-22
EP 1413573	ECLA	C07C319/18

OS CASREACT 140:356948 <--

AB A process for the production of 3-(methylthio)propanal comprises reacting mercaptomethane and acrolein in the presence of a catalyst comprising an organic base such as an N-alkylmorpholine (e.g., 4-methylmorpholine).
 ST methylthiopropanal prepn catalytic addn reaction mercaptomethane acrolein
 IT Cyanohydrins
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (2-hydroxy-4-(methylthio)butanenitrile; preparation of)
 IT Aldehydes, preparation
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (aliphatic, 3-(methylthio)propanal; catalytic addition
 reaction for the production of 3-(methylthio)propanal
 from mercaptomethane and acrolein)
 IT Carboxylic acids, uses
 RL: CAT (Catalyst use); USES (Uses)
 (aliphatic, N-alkylmorpholines; addition reaction catalysts in the production of
 3-(methylthio)propanal from mercaptomethane and acrolein)
 IT Amines, uses
 RL: CAT (Catalyst use); USES (Uses)

(cyclic, N-alkylmorpholines; addition reaction catalysts in the production of 3-(methylthio)propanal from mercaptomethane and acrolein)

IT Addition reaction
(for the production of 3-(methylthio)propanal from mercaptomethane and acrolein)

IT Hydrocyanation
(of 3-(methylthio)propanal with HCN to give 2-hydroxy-4-(methylthio)butanenitrile)

IT 64-18-6, Formic acid, uses 64-19-7, Acetic acid, uses 79-09-4, Propanoic acid, uses 100-74-3, 4-Ethylmorpholine 107-92-6, Butyric acid, uses 109-02-4, 1-Methylmorpholine
RL: CAT (Catalyst use); USES (Uses)
(addition reaction catalysts in the production of 3-(methylthio)propanal from mercaptomethane and acrolein)

IT 74-93-1, Mercaptomethane, reactions 107-02-8, Acrolein, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(catalytic addition reaction for the production of 3-(methylthio)propanal from mercaptomethane and acrolein)

IT 3268-49-3P, 3-(Methylthio)propanal
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(catalytic addition reaction for the production of 3-(methylthio)propanal from mercaptomethane and acrolein)

IT 17773-41-0P, 2-Hydroxy-4-(methylthio)butyronitrile
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 74-90-8, Hydrogen cyanide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with 3-(methylthio)propanal)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Biola, G; US 4225516 A 1980 HCPLUS
(2) Daicel Chem; EP 0601195 A 1994 HCPLUS
(3) Porter, H; US 5696282 A 1997 HCPLUS
(4) Vinton, W; US 2427582 A 1947 HCPLUS

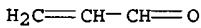
IT 74-93-1, Mercaptomethane, reactions 107-02-8, Acrolein, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(catalytic addition reaction for the production of 3-(methylthio)propanal from mercaptomethane and acrolein)

RN 74-93-1 HCPLUS

CN Methanethiol (8CI, 9CI) (CA INDEX NAME)

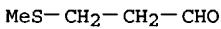


RN 107-02-8 HCPLUS
CN 2-Propenal (9CI) (CA INDEX NAME)



IT 3268-49-3P, 3-(Methylthio)propanal
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(catalytic addition reaction for the production of 3-(methylthio)propanal from mercaptomethane and acrolein)

RN 3268-49-3 HCPLUS
CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



L34 ANSWER 2 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
AN 2001:112320 HCPLUS
DN 134:164826
ED Entered STN: 15 Feb 2001
TI Manufacture of acrolein and acrolein derivatives from Diels-Alder reaction or Michael addition
IN Etzkorn, William George; Galley, Richard A.; Snead, Thomas E.; Brockwell, Jonathan Lester; Young, Mark Anderson; Maher, John Michael; Warren,

Barbara Knight
 PA Union Carbide Chemicals and Plastics Technology Corporation, USA
 SO U.S., 11 pp., Cont.-in-part of WO9736848.
 CODEN: USXXAM

DT Patent
 LA English
 IC C07C027-10; C07C045-27; C07C045-32
 NCL 568469900

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
 Section cross-reference(s): 23

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6187963	B1	20010213	US 1998-169798	19981009 <--
	WO 9736848	A1	19971009	WO 1997-US5100	19970327 <--
				W: GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG RW: AU, BB, BG, BR, CA, CN, CZ, HU, IS, JP, KP, KR, LK, LR, LV, MK, MX, NO, NZ, PL, SG, SI, TR, TT, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM	
	EP 891316	A1	19990120	EP 1997-917687	19970327 <--
	EP 891316	B1	20030521	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI	
PRAI	EP 1997-917687	A	19970327	<--	
	WO 1997-US5100	A2	19970327	<--	
	US 1996-14507P	P	19960401	<--	
	US 1996-14510P	P	19960401	<--	
	US 1996-14678P	P	19960401	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6187963	IC C07C027-10IC NCL 568469900	C07C045-27IC C07C045-32

AB A process for producing an acrolein derivative comprises (i) passing a propylene feed stream comprising propylene, oxygen, and a recycle gas comprising propane, oxygen, and at least one of carbon monoxide and carbon dioxide to an acrolein reaction zone wherein the propylene feed stream is contacted with an acrolein reaction catalyst at conditions effective to promote the formation of acrolein to provide an acrolein effluent stream comprising acrolein, propane, acetaldehyde and water; (ii) passing the acrolein effluent stream to an acrolein separation zone wherein the acrolein effluent stream is partially condensed to provide a liquid acrolein product stream comprising acrolein, acetaldehyde, and water and a recycle gas stream comprising the recycle gas; (iii) passing the acrolein product stream and a co-reactant capable of undergoing a Diels-Alder reaction or Michael addition with acrolein to an acrolein derivative reaction zone and contacting the acrolein and co-reactant under conditions effective to convert the acrolein and the co-reactant into an acrolein derivative; and (iv) recycling at least a portion of the recycle gas stream to the acrolein reaction zone. The process is characterized in that the propylene feed stream comprises an amount of propane of from about 5 to 70 volume% and effective to provide a propylene-to-acrolein reaction efficiency of from about 75 to 90 mol%.

ST acrolein deriv manuf; Diels Alder reaction acrolein; Michael addn acrolein

IT Diels-Alder reaction

Dimerization

Michael reaction

(manufacture of acrolein and acrolein derivs. from Diels-Alder reaction or Michael addition)

IT 75-07-0P, Acetaldehyde, preparation

RL: BYP (Byproduct); PREP (Preparation)
(manufacture of acrolein and acrolein derivs. from Diels-Alder reaction or Michael addition)

IT 100-73-2P, 2-Formyl-3,4-dihydro-2H-pyran 108-99-6P, .beta.-Picoline
110-86-1P, Pyridine, preparation 111-30-8P, Glutaraldehyde 504-63-2P,
1,3-Propanediol 1321-16-0P, Tetrahydrobenzaldehyde 3268-49-3P,
3-(Methylthio)propanal 31906-04-4P,
4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde 75454-86-3P
84315-07-1P

RL: IMF (Industrial manufacture); PREP (Preparation)
(manufacture of acrolein and acrolein derivs. from Diels-Alder reaction or Michael addition)

IT 107-02-8P, Acrolein, preparation 2134-29-4P,
3-Hydroxypropionaldehyde 4454-05-1P, 2-Methoxy-3,4-dihydro-2H-pyran

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (manufacture of acrolein and acrolein derivs. from Diels-Alder reaction or Michael addition)

IT 56-81-5, 1,2,3-Propanetriol, reactions 57-55-6, Propylene glycol, reactions 64-17-5, Ethanol, reactions 64-19-7, Acetic acid, reactions 65-85-0, Benzoic acid, reactions 67-56-1, Methanol, reactions 67-63-0, Isopropanol, reactions 74-93-1, Methyl mercaptan, reactions 79-09-4, Propionic acid, reactions 106-99-0, Butadiene, reactions 107-18-6, Allyl alcohol, reactions 107-21-1, Ethylene glycol, reactions 107-25-5, Methyl vinyl ether 108-24-7, Acetic anhydride 115-07-1, Propylene, reactions 115-77-5, Pentaerythritol, reactions 123-35-3, Myrcene 543-39-5 7664-41-7, Ammonia, reactions 7732-18-5, Water, reactions 30700-92-6

RL: RCT (Reactant); RACT (Reactant or reagent)
 (manufacture of acrolein and acrolein derivs. from Diels-Alder reaction or Michael addition)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD

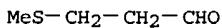
RE
 (1) Angevine; US 5395940 1995 HCPLUS
 (2) Anon; EP 0117146 1984 HCPLUS
 (3) Anon; WO 9736848 1997 HCPLUS
 (4) Bunning; US 4999452 1991 HCPLUS
 (5) Cunningham; US 2626282 1953 HCPLUS
 (6) Dai; Journal of Organic Chemistry 1995, V60, P8128 HCPLUS
 (7) Davis; US 5321180 1994 HCPLUS
 (8) Etzkorn; US 5155262 1992 HCPLUS
 (9) Etzkorn; US 5183936 1993 HCPLUS
 (10) Etzkorn; US 5198578 1993 HCPLUS
 (11) Etzkorn; US 5243082 1993 HCPLUS
 (12) Golubko; Zh Prikl Khim (Leningrad) 1987, V60(3), P588 HCPLUS
 (13) Haas; US 5364987 1994 HCPLUS
 (14) Hoepp; US 5892129 1999 HCPLUS
 (15) Hsu; US 5352837 1994 HCPLUS
 (16) Hsu; US 5637766 1997 HCPLUS
 (17) Menard; US 4378314 1983 HCPLUS
 (18) Paparizos; US 4499308 1985 HCPLUS
 (19) Paparizos; US 4536585 1985 HCPLUS
 (20) Reichle; US 5354915 1994 HCPLUS
 (21) Shaw; US 5696282 1997 HCPLUS

IT 3268-49-3P, 3-(Methylthio)propanal

RL: IMF (Industrial manufacture); PREP (Preparation)
 (manufacture of acrolein and acrolein derivs. from Diels-Alder reaction or Michael addition)

RN 3268-49-3 HCPLUS

CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



IT 107-02-8P, Acrolein, preparation

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (manufacture of acrolein and acrolein derivs. from Diels-Alder reaction or Michael addition)

RN 107-02-8 HCPLUS

CN 2-Propenal (9CI) (CA INDEX NAME)



IT 74-93-1, Methyl mercaptan, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
 (manufacture of acrolein and acrolein derivs. from Diels-Alder reaction or Michael addition)

RN 74-93-1 HCPLUS

CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



AN 2000:909250 HCAPLUS
 DN 134:43711
 ED Entered STN: 28 Dec 2000
 TI Oxidative processes for the manufacture of acrolein from propylene and oxygen
 IN Etzkorn, William George; Brockwell, Jonathan Lester; Young, Mark Anderson; Maher, John Michael; Warren, Barbara Knight
 PA Union Carbide Chemicals and Plastics Technology Corporation, USA
 SO U.S., 10 pp., Cont.-in-part of Appl. No. PCT/US97/05100.
 CODEN: USXXAM
 DT Patent
 LA English
 IC C07C045-32
 NCL 568469900
 CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
 Section cross-reference(s): 23, 48

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6166263	A	20001226	US 1998-169335	19981009 <--
	WO 9736848	A1	19971009	WO 1997-US5100	19970327 <--
		W:	GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG		
		RW:	AU, BB, BG, BR, CA, CN, CZ, HU, IS, JP, KP, KR, LK, LR, LV, MK, MX, NO, NZ, PL, SG, SI, TR, TT, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
PRAI	WO 1997-US5100	A2	19970327	<--	
	US 1996-14507P	P	19960401	<--	
	US 1996-14510P	P	19960401	<--	
	US 1996-14678P	P	19960401	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6166263	IC	C07C045-32
	NCL	568469900

AB Acrolein is produced in high yield and selectivity in a process comprising: (i) passing a propylene feedstream comprising propylene, oxygen and a recycle gas comprising propane, oxygen and carbon monoxide and/or carbon dioxide to an acrolein reaction zone where the propylene feedstream is contacted with an acrolein reaction catalyst to provide an acrolein effluent stream comprising acrolein, propane, acetaldehyde and water; (ii) passing the acrolein effluent stream to an acrolein separation zone where the acrolein effluent stream is partially condensed to provide a liquid acrolein product stream comprising acrolein, acetaldehyde and water and a recycle gas stream comprising the recycle gas; and (iii) recycling a portion of the recycle gas stream to the acrolein reaction zone. The propylene feedstream comprises 5-70 volume% propane and is effective to provide a propylene-to-acrolein reaction efficiency of 75-90 mol%. The presence of propane in the propylene-to-acrolein reaction can enhance the efficiency of the processes.

ST acrolein manuf propylene oxidn

IT Oxidation

(gas-phase; manufacture of acrolein from propylene and oxygen via)

IT Addition reaction

(of acrolein)

IT 67-56-1, Methanol, reactions 107-18-6, Allyl alcohol, reactions 107-25-5, Vinyl methyl ether 115-77-5, Pentaerythritol, reactions 7732-18-5, Water, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction of acrolein with)

IT 74-93-1, Methanethiol, reactions 106-99-0, Butadiene, reactions 543-39-5

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reactions of acrolein with)

IT 75-07-0P, Acetaldehyde, preparation

RL: BYP (Byproduct); PREP (Preparation)
(oxidative processes for the manufacture of acrolein from propylene and oxygen)

IT 107-02-8P, Acrolein, preparation

RL: IMF (Industrial manufacture); RCT (Reactant); PREP

(Preparation); RACT (Reactant or reagent)

(oxidative processes for the manufacture of acrolein from propylene and oxygen)

IT 74-98-6, Propane, uses

RL: MOA (Modifier or additive use); USES (Uses)

(oxidative processes for the manufacture of acrolein from propylene and oxygen)

IT 124-38-9, Carbon dioxide, uses 630-08-0, Carbon monoxide, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (oxidative processes for the manufacture of acrolein from propylene and oxygen)

IT 115-07-1, Propene, reactions 7782-44-7, Oxygen, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxidative processes for the manufacture of acrolein from propylene and oxygen)

IT 2134-29-4P, 3-Hydroxypropionaldehyde
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of)

IT 111-30-8P, Glutaraldehyde
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of)

IT 78-19-3P 100-73-2P, 2-Formyl-3,4-dihydro-2H-pyran 504-63-2P,
 1,3-Propanediol 1321-16-0P, Tetrahydrobenzaldehyde 2806-84-0P,
 3-(Methoxy)propionaldehyde 3268-49-3P 4454-05-1P,
 2-Methoxy-3,4-dihydro-2H-pyran 31906-04-4P, 4-(4-Hydroxy-4-methylpentyl)-
 3-cyclohexene-1-carboxaldehyde 84315-07-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Anon; EP 0117146 1984 HCPLUS
- (2) Anon; WO 9736848 1997 HCPLUS
- (3) Bunning; US 4999452 1991 HCPLUS
- (4) Cunningham; US 2626282 1953 HCPLUS
- (5) Davis; US 5321180 1994 HCPLUS
- (6) Etzkorn; US 5155262 1992 HCPLUS
- (7) Etzkorn; US 5183936 1993 HCPLUS
- (8) Etzkorn; US 5198578 1993 HCPLUS
- (9) Etzkorn; US 5243082 1993 HCPLUS
- (10) Hsu; US 5352837 1994 HCPLUS
- (11) Hsu; US 5637766 1997 HCPLUS
- (12) Rechle; US 5354915 1994 HCPLUS
- (13) Shaw; US 5696282 1997 HCPLUS

IT 74-93-1, Methanethiol, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reactions of acrolein with)

RN 74-93-1 HCPLUS

CN Methanethiol (8CI, 9CI) (CA INDEX NAME)

H₃C—SH

IT 107-02-8P, Acrolein, preparation
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (oxidative processes for the manufacture of acrolein from propylene and oxygen)

RN 107-02-8 HCPLUS

CN 2-Propenal (9CI) (CA INDEX NAME)

H₂C=CH—CH=O

IT 3268-49-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

RN 3268-49-3 HCPLUS

CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)

MeS—CH₂—CH₂—CHO

L34 ANSWER 4 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:535110 HCPLUS
 DN 133:150414

ED Entered STN: 04 Aug 2000
 TI Synthesis of oligoketides
 IN Ashley, Gary; Chan-Kai, Isaac Chu-Wah; Burlingame, Mark Alma
 PA Kosan Biosciences, Inc., USA
 SO PCT Int. Appl., 87 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C07C327-00
 CC 26-6 (Biomolecules and Their Synthetic Analogs)
 Section cross-reference(s): 1, 7, 9, 10

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000044717	A2	20000803	WO 2000-US2397	20000127 <--
	WO 2000044717	A3	20010208		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, LZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2361040	AA	20000803	CA 2000-2361040	20000127 <--
	EP 1144375	A2	20011017	EP 2000-911673	20000127 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002535387	T2	20021022	JP 2000-595973	20000127 <--
	US 6492562	B1	20021210	US 2000-492733	20000127 <--
	US 2003096374	A1	20030522	US 2002-214653	20020807 <--
	US 2003092140	A1	20030515	US 2002-215964	20020808 <--
PRAI	US 1999-117384P	P	19990127	<--	
	US 2000-492733	A3	20000127	<--	
	WO 2000-US2397	W	20000127	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000044717	ICM	C07C327-00
US 6492562	ECLA	C07C327/30
US 2003096374	ECLA	C07C327/30
US 2003092140	ECLA	C07C327/30

OS CASREACT 133:150414

AB Diketide and triketide thioesters were prepared by The method comprises (a) treating benzoxazolinone derivative of diketide or triketide with salt of thiol anion form N-acyl cysteamine thioester of diketide or triketide; (b) treating 2-oxazolidinone derivative of diketide or triketide with lithium salt of thiol anion in the presence of sufficient Lewis acid (trimethylammonium) form N-acyl cysteamine thioester of diketide or triketide. The resulting thioesters may be used as intermediates in the synthesis of desired polyketides by treating a polyketide synthase (PKS) enzyme complex with diketide or polyketide thioester, and may contain functional groups which ultimately reside in side chains on the resulting polyketide and thus can be used further to manipulate the polyketide so as to form derivs. The polyketides produced may also be tailored by glycosylation, hydroxylation and the like by treating polyketide with tailoring enzymes. The method can be used to synthesize oligoketide thioester on a solid support which comprises (1) reacting an N-acyl-2-imidazolidinone coupled to solid support with an aldehyde or acyl moiety under conditions whereby aldehyde or acyl moiety couples to a position .alpha. to a carbonyl in the acyl group of the 2-imidazolidinone; (2) optionally repeating step (1); (3) cleaving the resulting oligoketide from solid support by reaction with lithium salt of thiol anion in the presence of Lewis acid providing oligoketide thioester. Or alternately by (1)reacting an N-acyl benzoxazolone coupled to solid support with an aldehyde under conditions whereby aldehyde couples to a position .alpha. to carbonyl in the acyl group of the benzoxalozone; (2) optionally repeating step (1); (3) cleaving the resulting oligoketide from the solid support by reaction with salt of thiol anion, providing oligoketide thioester. Thus, propionyl oxazolidinone mixed with anhydrous dichloromethane, flushed with nitrogen, cooled to -15.degree.C in methanol/ice bath; Dibutylboron triflate(in dichloromethane) and diisopropylethylamine were added slowly and resp. to the reaction mixture while keeping temperature below 3.degree.C; After that cooled the temperature to -65.degree.C using dry ice /isopropanol bath, acrolein was added over 5

min by syringe, stirring the reaction mixture for 30 min, after that 1 M aqueous phosphate solution(pH 7.0), methanol, and 2:1 methanol-30% hydrogen peroxide were added resp. as quickly as possible while keeping the temperature below 10.degree.C, the reaction stirred for one more hour, then removed the solvent by rotary evaporation until a slurry remained, further purification giving the desired product (4S)-N-[(2S,3R)-2-methyl-3-hydroxy-4-pentenoyl]-4-benzyl-2-oxazolidinone. 15-Fluoro-6-deoxyerythronolide B was prep'd by feeding (2S,3R)-5-fluoro-3-hydroxy-2-methylpentanoate N-acetyl-cysteamine thioester to S. coelicolor CH999/pJRK2.

ST diketide triketide polyketide oligoketide synthesis; erythronolide B derive prepn

IT Saccharopolyspora erythraea
Solid phase synthesis
Streptomyces coelicolor
(synthesis of oligoketides)

IT Polyketides
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of oligoketides)

IT 194714-70-0P 215738-19-5P 215738-21-9P 215738-27-5P 215738-28-6P
215738-44-6P 215738-46-8P 215738-48-0P 215738-50-4P 287399-08-0P
287399-09-1P 287399-10-4P 287399-11-5P 287399-12-6P 287399-13-7P
287399-14-8P
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP
(Preparation)
(synthesis of oligoketides)

IT 16962-53-1, Trimethylammonium 62086-04-8, Tin(II)triflate
RL: CAT (Catalyst use); USES (Uses)
(synthesis of oligoketides)

IT 59-49-4, 2(3H)-Benzoxazolone 85-41-6, Phthalimide 95-25-0,
Chloroxazone 100-46-9, Benzylamine, reactions 100-52-7, Benzaldehyde,
reactions 104-53-0, 3-Phenylpropanal 107-02-8, Acrolein,
reactions 108-94-1, Cyclohexanone, reactions 123-72-8, Butyraldehyde
123-73-9, trans-Crotonaldehyde 141-75-3, Butyryl chloride
156-57-0, Cysteamine hydrochloride 352-91-0,
1-Bromo-3-fluoropropane 406-87-1, 4,4,4-Trifluorobutyraldehyde
407-83-0 462-43-1, 3-Fluoropropanol 462-74-8 500-22-1,
Pyridine-3-carboxaldehyde 625-35-4, trans-Crotonyl chloride 630-19-3,
Trimethylacetaldehyde 1450-85-7, 2-Mercaptopyrimidine 1489-69-6,
Cyclopropanecarboxaldehyde 2100-17-6, 4-Penten-1-al 2975-46-4,
3-Trimethylsilylpropargyl aldehyde 7550-45-0, Titanium tetrachloride,
reactions 19434-65-2, 3-Chloropropanal 58503-60-9, 3-Azidopropanal
60656-87-3, Benzyloxyacetaldehyde 65032-54-4, 3-Bromopropanal
79956-01-7, Polyketide synthase 101711-78-8 101712-01-0 111964-99-9
155957-56-5 183064-83-7 287398-55-4 287398-56-5 287398-57-6
287398-58-7 287398-59-8 287398-60-1 287398-64-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of oligoketides)

IT 123-38-6P, Propionaldehyde, preparation 1190-73-4P, N-Acetylcysteamine
1420-88-8P, N,S-Diacetyl cysteamine 2436-29-5P 3268-49-3P, 3-(
Methylthio)propionaldehyde 33388-19-1P 77063-66-2P,
3-Fluoropropanal 89436-27-1P 89436-29-3P 101711-79-9P 115444-28-5P
124439-37-8P 139426-88-3P 197640-48-5P 209671-25-0P 220081-70-9P
220081-71-0P 287398-61-2P 287398-62-3P 287398-63-4P 287398-65-6P
287398-66-7P 287398-68-9P 287398-69-0P 287398-70-3P 287398-71-4P
287398-72-5P 287398-73-6P 287398-74-7P 287398-75-8P 287398-76-9P
287398-77-0P 287398-78-1P 287398-79-2P 287398-81-6P 287398-82-7P
287398-83-8P 287398-84-9P 287398-85-0P 287398-86-1P 287398-87-2P
287398-88-3P 287398-89-4P 287398-90-7P 287398-91-8P 287398-92-9P
287398-93-0P 287398-94-1P 287398-95-2P 287398-96-3P 287398-97-4P
287398-98-5P 287398-99-6P 287399-00-2P 287399-01-3P 287399-02-4P
287399-03-5P 287399-04-6P 287399-05-7P 287399-06-8P 287399-07-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(synthesis of oligoketides)

IT 287399-15-9P 287399-16-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of oligoketides)

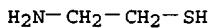
IT 107-02-8, Acrolein, reactions 156-57-0, Cysteamine
hydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of oligoketides)

RN 107-02-8 HCPLUS

CN 2-Propenal (9CI) (CA INDEX NAME)

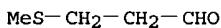


RN 156-57-0 HCPLUS
 CN Ethanethiol, 2-amino-, hydrochloride (8CI, 9CI) (CA INDEX NAME)



● HCl

IT 3268-49-3P, 3-(Methylthio)propionaldehyde
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (synthesis of oligoketides)
 RN 3268-49-3 HCPLUS
 CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



L34 ANSWER 5 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:289080 HCPLUS
 DN 132:309995
 ED Entered STN: 04 May 2000
 TI Processes for the manufacture of 3-(methylthio)propanal
 IN Brockwell, Jonathan L.; Young, Mark A.; Etzkorn, William G.; Warren,
 Barbara K.; Maher, John M.
 PA Union Carbide Chemicals & Plastics Technology Corporation, USA
 SO U.S., 12 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM C07C319-02
 NCL 568041000
 CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
 Section cross-reference(s): 23, 48

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6057481	A	20000502	US 1998-155750	19981001 <--
	WO 9736848	A1	19971009	WO 1997-US5100	19970327 <--
		W:	GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG		
		RW:	AU, BB, BG, BR, CA, CN, CZ, HU, IS, JP, KP, KR, LK, LR, LV, MK, MX, NO, NZ, PL, SG, SI, TR, TT, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	AU 9725947	A1	19971022	AU 1997-25947	19970327 <--
	JP 2002503206	T2	20020129	JP 1997-535453	19970327 <--
	JP 3490459	B2	20040126		
	AT 240924	E	20030615	AT 1997-917687	19970327 <--
PRAI	US 1996-14507P	P	19960401		
	US 1996-14510P	P	19960401		
	US 1996-14678P	P	19960401		
	WO 1997-US5100	W	19970327		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6057481	ICM	C07C319-02
	NCL	568041000

AB A process for the conversion of propylene to 3-(methylthio)propanal (I) by converting propylene to acrolein and converting the acrolein with Me mercaptan to I is described. The processes utilize oxygen and recycle propane to the acrolein reactor. The process feeds can comprise, propane, propylene or their mixts. The presence of propane in the propylene-to-acrolein reaction can enhance the efficiency of the processes.

ST methylthiopropanal manuf; propene conversion manuf methylthiopropanal
 IT Addition reaction catalysts

(for the reaction of Me mercaptan with acrolein in the manufacture of
3-(methylthio)propanal)

IT Oxidation
(gas-phase; of propene to acrolein)

IT Addition reaction
(of Me mercaptan and acrolein in the manufacture of 3-(methylthio)propanal)

IT Dehydrogenation
(of propane to propene)

IT 75-07-0P, Acetaldehyde, preparation
RL: BYP (Byproduct); PREP (Preparation)
(processes for the manufacture of 3-(methylthio)propanal
)

IT 124-38-9P, Carbon dioxide, preparation 630-08-0P, Carbon monoxide,
preparation
RL: BYP (Byproduct); NUU (Other use, unclassified); PREP
(Preparation); USES (Uses)
(processes for the manufacture of 3-(methylthio)propanal
)

IT 3268-49-3P, 3-(Methylthio)propanal
RL: IMF (Industrial manufacture); PREP (Preparation)
(processes for the manufacture of 3-(methylthio)propanal
)

IT 107-02-8P, Acrolein, preparation 115-07-1P, Propene, preparation
RL: IMF (Industrial manufacture); RCT (Reactant);
PREP (Preparation); RACT (Reactant or reagent)
(processes for the manufacture of 3-(methylthio)propanal
)

IT 74-93-1, Methyl mercaptan, reactions 74-98-6, Propane, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(processes for the manufacture of 3-(methylthio)propanal)

IT 1305-78-8, Calcium oxide, uses
RL: CAT (Catalyst use); USES (Uses)
(processes for the manufacture of 3-(methylthio)propanal using)

IT 7782-44-7, Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(processes for the manufacture of 3-(methylthio)propanal using)

IT 1304-76-3, Bismuth oxide, uses 1332-37-2, Iron oxide, uses 11098-99-0,
Molybdenum oxide 265114-52-1, ACF 2
RL: CAT (Catalyst use); USES (Uses)
(processes for the manufacture of 3-(methylthio)propanal using a catalyst
containing)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD

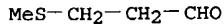
RE

- (1) Anon; EP 0117146 1984 HCPLUS
- (2) Anon; EP 0257565 1988 HCPLUS
- (3) Anon; J A Chem Soc 1948, V70, P1450
- (4) Bernard; US 2676190 1954 HCPLUS
- (5) Biola; US 4225516 1980 HCPLUS
- (6) Blackburn; US 5663409 1997 HCPLUS
- (7) Bunning; US 4999452 1991 HCPLUS
- (8) Cunningham; US 2626282 1953 HCPLUS
- (9) Davis; US 5321180 1994 HCPLUS
- (10) Etzkorn; US 5155262 1992 HCPLUS
- (11) Etzkorn; US 5183936 1993 HCPLUS
- (12) Etzkorn; US 5198578 1993 HCPLUS
- (13) Etzkorn; US 5243082 1993 HCPLUS
- (14) Hefner; US 5705684 1998 HCPLUS
- (15) Hsu; US 5352837 1994 HCPLUS
- (16) Hsu; US 5637766 1997 HCPLUS
- (17) Hsu; US 5744647 1998 HCPLUS
- (18) Koberstein; US 4048232 1977 HCPLUS
- (19) Komorn; US 4319047 1982 HCPLUS
- (20) Reichle; US 5354915 1994 HCPLUS
- (21) Shaw; US 5696282 1997 HCPLUS
- (22) Shima; US 3529940 1970
- (23) Yoshitsugu; US 3438868 1969 HCPLUS

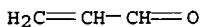
IT 3268-49-3P, 3-(Methylthio)propanal
RL: IMF (Industrial manufacture); PREP (Preparation)
(processes for the manufacture of 3-(methylthio)propanal
)

RN 3268-49-3 HCPLUS

CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



IT 107-02-8P, Acrolein, preparation
 RL: IMF (Industrial manufacture); RCT (Reactant);
 PREP (Preparation); RACT (Reactant or reagent)
 (processes for the manufacture of 3-(methylthio)propanal
)
 RN 107-02-8 HCAPLUS
 CN 2-Propenal (9CI) (CA INDEX NAME)



IT 74-93-1, Methyl mercaptan, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (processes for the manufacture of 3-(methylthio)propanal)
 RN 74-93-1 HCAPLUS
 CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



L34 ANSWER 6 OF 28 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:450926 HCAPLUS
 DN 131:89346
 ED Entered STN: 23 Jul 1999
 TI Continuous process for the preparation of 3-(methylthio)propanal from acrolein and methyl mercaptan
 IN Hsu, Yung C.; Ruest, Dennis A.
 PA Novus International, Inc., USA
 SO U.S., 26 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM C07C319-00
 NCL 568041000
 CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
 Section cross-reference(s): 23, 48
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5925794	A	19990720	US 1996-668572	19960620 <--
	US 5352837	A	19941004	US 1993-73763	19930608 <--
	US 5637766	A	19970610	US 1995-557699	19951113 <--
	CN 1188470	A	19980722	CN 1996-194943	19960621 <--
	CN 1120834	B	20030910		
	US 6031138	A	20000229	US 1998-102025	19980622 <--
	US 6320076	B1	20011120	US 1999-470407	19991222 <--
PRAI	US 1993-73763	A2	19930608	<--	
	US 1994-273216	B1	19940711	<--	
	US 1995-421P	P	19950622	<--	
	US 1995-557699	A2	19951113	<--	
	US 1996-667099	B1	19960620	<--	
	US 1996-668572	B1	19960620	<--	
	US 1998-102025	A3	19980622	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5925794	ICM	C07C319-00
	NCL	568041000
US 6031138	ECLA	C07C319/18
US 6320076	ECLA	C07C045/35+47/22; C07C045/78A; C07C045/81; C07C319/18

AB 3-(Methylthio)propanal (I) is prepared in a continuous process in which a liquid reaction medium (containing I, Me mercaptan, and an addition reaction catalyst) is contacted with a gaseous acrolein feed stream (containing acrolein vapor and noncondensable gas) in a gas-liquid contact zone. Acrolein is transferred from the acrolein feed stream to the reaction medium and reacted with Me mercaptan in that medium to produce a liquid reaction product containing I. The noncondensable gas is separated from the liquid reaction product, the reaction product is divided into a product fraction and a circulating fraction, and the circulating fraction is recycled to the gas-liquid contact zone. Process flow diagrams are presented.

ST methylthiopropanal continuous manuf; acrolein addn reaction methyl

IT mercaptan prep methylthiopropanal
 IT Addition reaction
 (continuous process for the preparation of 3-(methylthio)propanal from acrolein and Me mercaptan via)
 IT Oxidation
 (of propylene to acrolein)
 IT Reactors
 (plug-flow; continuous process for the preparation of 3-(methylthio)propanal from acrolein and Me mercaptan using)
 IT 583-91-5P, 2-Hydroxy-4-(methylthio)butyric acid
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (continuous process for the preparation of 3-(methylthio)propanal from acrolein and Me mercaptan)
 IT 107-02-8P, 2-Propenal, preparation 3268-49-3P, 3-(Methylthio)propanal 59121-24-3P, 4-(Methylthio)butyronitrile
 RL: IMF (Industrial manufacture); RCT (Reactant);
 PREP (Preparation); RACT (Reactant or reagent)
 (continuous process for the preparation of 3-(methylthio)propanal from acrolein and Me mercaptan)
 IT 74-90-8, Hydrogen cyanide, reactions 74-93-1, Methyl mercaptan, reactions 115-07-1, 1-Propene, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (continuous process for the preparation of 3-(methylthio)propanal from acrolein and Me mercaptan)

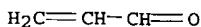
RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

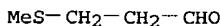
- (1) Anon; CA 797873 1968
- (2) Anon; GB 1150252 1969
- (3) Anon; GB 1162054 1969
- (4) Anon; GB 1166961 1969
- (5) Anon; GB 1173174 1969
- (6) Anon; CA 820968 1969
- (7) Anon; GB 1177470 1970 HCPLUS
- (8) Anon; FR 2314917 1970 HCPLUS
- (9) Anon; NL 6809647 1970 HCPLUS
- (10) Anon; JP 4856144 1973
- (11) Anon; RO 85095 1984 HCPLUS
- (12) Anon; WO 96/01810 1996 HCPLUS
- (13) Anon; PCT/US93/08552 International Search Report completed Nov 17, 1993
- (14) Anon; PCT/US95/08532 International Search Report completed Sep 19, 1995
- (15) Bernard; US 2676190 1954 HCPLUS
- (16) Biola; US 4225516 1980 HCPLUS
- (17) Cunningham; US 2626282 1953 HCPLUS
- (18) Etzkorn; US 5155262 1992 HCPLUS
- (19) Etzkorn; US 5183936 1993 HCPLUS
- (20) Etzkorn; US 5198578 1993 HCPLUS
- (21) Gresham; US 2485236 1949 HCPLUS
- (22) Gresham; US 2542768 1951 HCPLUS
- (23) Gresham; US 2564105 1951 HCPLUS
- (24) Hickinbottom, W; Reactions of Organic Compounds 1957, P381
- (25) Hsu; US 5352837 1994 HCPLUS
- (26) Hsu; US 5637766 1997 HCPLUS
- (27) Hunt; US 2776996 1957 HCPLUS
- (28) Koberstein; US 4048232 1977 HCPLUS
- (29) Komorn; US 4319047 1982 HCPLUS
- (30) Livak; US 2557913 1951 HCPLUS
- (31) Mannsfeld; US 3878057 1975 HCPLUS
- (32) Meyer; US 3574766 1971
- (33) Ouchi; US 3833651 1974 HCPLUS
- (34) Pierson; US 2523633 1950 HCPLUS
- (35) Pierson; US 2584496 1952 HCPLUS
- (36) Pierson; Synthesis of DL-Methionine 1948, V70, P1450 HCPLUS
- (37) Sandler; US 5015776 1991 HCPLUS
- (38) Sawaki; US 3438868 1969 HCPLUS
- (39) Shima; US 3529940 1970
- (40) Vander Weele; US 2521677 1950 HCPLUS

IT 107-02-8P, 2-Propenal, preparation 3268-49-3P, 3-(Methylthio)propanal
 RL: IMF (Industrial manufacture); RCT (Reactant);
 PREP (Preparation); RACT (Reactant or reagent)
 (continuous process for the preparation of 3-(methylthio)propanal from acrolein and Me mercaptan)

RN 107-02-8 HCPLUS
 CN 2-Propenal (9CI) (CA INDEX NAME)



RN 3268-49-3 HCPLUS
 CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



IT 74-93-1, Methyl mercaptan, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (continuous process for the preparation of 3-(methylthio)propanal from
 acrolein and Me mercaptan)
 RN 74-93-1 HCPLUS
 CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



L84 ANSWER 7 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 1998:31172 HCPLUS
 DN 128:114715
 ED Entered STN: 19 Jan 1998
 TI Processes for the preparation of 3-(methylthio)propanal and
 2-hydroxy-4-(methylthio)butanenitrile
 IN Blackburn, Thomas F.; Pellegrin, Paul F.
 PA Novus International, Inc., USA
 SO U.S., 9 pp., Cont.-in-part of U.S. 5,663,409.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM C07C323-22
 ICS C07C253-00; C07C253-30; C07C319-20
 NCL 558351000
 CC 23-9 (Aliphatic Compounds)
 Section cross-reference(s): 45
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5705675	A	19980106	US 1995-581249	19951229 <--
	US 5663409	A	19970902	US 1995-476356	19950607 <--
	ZA 9604335	A	19960820	ZA 1996-4335	19960528 <--
	WO 9640631	A1	19961219	WO 1996-US9060	19960604 <--
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML				
	AU 9659873	A1	19961230	AU 1996-59873	19960604 <--
	AU 714151	B2	19991223		
	EP 830341	A1	19980325	EP 1996-917222	19960604 <--
	EP 830341	B1	20010905		
	R: BE, DE, DK, ES, FR, GB, IT, LU, NL, MC, PT, IE				
	CN 1189818	A	19980805	CN 1996-195190	19960604 <--
	CN 1092184	B	20021009		
	JP 11511119	T2	19990928	JP 1997-501471	19960604 <--
	RU 2173681	C2	20010920	RU 1998-100220	19960604 <--
	ES 2160819	T3	20011116	ES 1996-917222	19960604 <--
	PT 830341	T	20011228	PT 1996-917222	19960604 <--
PRAI	US 1995-476356	A2	19950607	<--	
	US 1995-581249	A	19951229	<--	
	WO 1996-US9060	W	19960604	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5705675	ICM	C07C323-22
	ICS	C07C253-00; C07C253-30; C07C319-20
	NCL	558351000
WO 9640631	ECLA	C07C319/18; C07C319/20
OS	CASREACT 128:114715; MARPAT 128:114715	
AB	A catalytic processes for the preparation of 3-(methylthio)propanal and	

2-hydroxy-4-(methylthio)butanenitrile using novel addition catalysts is described. The novel addition catalysts include: triisopropanolamine, nicotinamide, imidazole, benzimidazole, 2-fluoropyridine, poly-4-vinylpyridine, 4-dimethylaminopyridine, picoline, pyrazine, trialkylamines, and tertiary amines. E.g., reaction of MeSH and acrolein in presence of poly-4-vinylpyridine gave 89.0% 3-(methylthio)propanal. The aldehyde product, containing the poly-4-vinylpyridine catalyst, was converted to the nitrile in the same reactor by treatment with HCN. The yield of nitrile was 72.9%.

ST methylthiopropanal prepn cyanidation; propanal methylthio prepn cyanidation; hydroxymethylthiobutanenitrile prepn; butanenitrile hydroxymethylthio prepn; addn reaction catalyst

IT Addition reaction catalysts
 (for preparation of (methylthio)propanal and hydroxy(methylthio)butanenitrile)

IT 51-17-2, Benzimidazole 56-12-2, 4-Aminobutyric acid, uses 98-92-0, Nicotinamide 102-69-2, Tripropylamine 102-82-9, Tributylamine 102-87-4, Tridodecylamine 104-15-4, p-Toluenesulfonic acid, uses 107-45-9, tert-Octylamine 108-89-4, 4-Picoline 110-86-1, Pyridine, uses 122-20-3, Triisopropanolamine 139-33-3, Disodium EDTA 141-53-7, Sodium formate 150-59-4 288-32-4, Imidazole, uses 290-37-9, Pyrazine 372-47-4, 3-Fluoropyridine 372-48-5, 2-Fluoropyridine 552-82-9, N-Methyldiphenylamine 557-34-6, Zinc acetate 603-34-9, Triphenylamine 620-40-6, Tribenzylamine 621-77-2, Tripentylamine 1116-76-3, Trioctylamine 1122-58-3, 4-Dimethylaminopyridine 3486-35-9, Zinc carbonate 5137-55-3, Trioctylmethylammonium chloride 7647-10-1, Palladium chloride 12680-49-8, Sodium molybdate 13977-33-8, N-Methyldiphenethylamine 25232-41-1, Poly-4-vinylpyridine 33100-27-5, 15-Crown-5 198821-93-1
 RL: CAT (Catalyst use); USES (Uses)
 (preparation of (methylthio)propanal and hydroxy(methylthio)butanenitrile)

IT 3268-49-3P, 3-(Methylthio)propanal
 RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of (methylthio)propanal and hydroxy(methylthio)butanenitrile)

IT 17773-41-0P, 2-Hydroxy-4-(methylthio)butanenitrile
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
 (preparation of (methylthio)propanal and hydroxy(methylthio)butanenitrile)

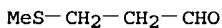
IT 74-93-1, Methyl mercaptan, reactions 107-02-8, Acrolein, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of (methylthio)propanal and hydroxy(methylthio)butanenitrile)

RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (2) Anon; GB 867966 1961 HCPLUS
- (3) Anon; GB 986198 1965
- (4) Anon; CA 797873 1968
- (5) Anon; GB 1150252 1969
- (6) Anon; GB 1162054 1969
- (7) Anon; GB 1166961 1969
- (8) Anon; GB 1173174 1969
- (9) Anon; CA 820968 1969
- (10) Anon; GB 1177470 1970 HCPLUS
- (11) Anon; JP 74024046 1974 HCPLUS
- (12) Anon; JP 74024890 1974 HCPLUS
- (13) Anon; JP 74024890 1974
- (14) Anon; JP 50-4018 1975
- (15) Anon; GB 1510256 1978
- (16) Bernard; US 2676190 1954 HCPLUS
- (17) Biola; US 4225516 1980 HCPLUS
- (18) Blake; US 2745745 1956 HCPLUS
- (19) Blake; US 2938053 1960 HCPLUS
- (20) Brzozowski, Z; Roczniki Chem 1959, V33, P217 HCPLUS
- (21) Brzozowski, Z; Roczniki Chem 1959, V33, P217 HCPLUS
- (22) Cunningham; US 2626282 1953 HCPLUS
- (23) Darcas; US 3699148 1972 HCPLUS
- (24) Gresham; US 2542768 1951 HCPLUS
- (25) Hsu; US 5352837 1994 HCPLUS
- (26) Hunt; US 2776996 1957 HCPLUS
- (27) Koberstein; US 4048232 1977 HCPLUS
- (28) Komora; US 4319047 1982 HCPLUS

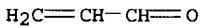
(29) Livak; US 2557913 1951 HCPLUS
 (30) Mannsfeld; US 3878057 1975 HCPLUS
 (31) Meyer; US 3574766 1971
 (32) Ouchi; US 3833651 1974 HCPLUS
 (33) Pierson; US 2523633 1950 HCPLUS
 (34) Pierson; US 2584496 1952 HCPLUS
 (35) Sawaki; US 3438868 1969 HCPLUS
 (36) Shima; US 3529940 1970
 (37) Vander Weele; US 2521677 1950 HCPLUS
 IT 3268-49-3P, 3-(Methylthio)propanal
 RL: IMF (Industrial manufacture); RCT (Reactant); SPN
 (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of (methylthio)propanal and hydroxy(methylthio)butanenitrile)
 RN 3268-49-3 HCPLUS
 CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



IT 74-93-1, Methyl mercaptan, reactions 107-02-8, Acrolein, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of (methylthio)propanal and hydroxy(methylthio)butanenitrile)
 RN 74-93-1 HCPLUS
 CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



RN 107-02-8 HCPLUS
 CN 2-Propenal (9CI) (CA INDEX NAME)



L34 ANSWER 8 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 1997:165266 HCPLUS
 DN 126:157183
 ED Entered STN: 12 Mar 1997
 TI Process for the continuous preparation of 3-(methylthio)propanal from acrolein and methyl mercaptan

IN Hsu, Yung C.
 PA Novus International, Inc., USA
 SO PCT Int. Appl., 85 pp.

CODEN: PIXXD2

DT Patent
 LA English

IC ICM C07C319-18
 ICS C07C323-22

CC 23-14 (Aliphatic Compounds)
 Section cross-reference(s): 45, 48

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9700858	A1	19970109	WO 1996-US10920	19960621 <--
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML				
	US 5905171	A	19990518	US 1996-667099	19960620 <--
	AU 9663959	A1	19970122	AU 1996-63959	19960621 <--
	AU 726921	B2	20001123		
	EP 842149	A1	19980520	EP 1996-923452	19960621 <--
	EP 842149	B1	20030205		
	R: BE, DE, DK, ES, FR, GB, IT, LU, NL, MC, PT, IE				
	CN 1188470	A	19980722	CN 1996-194943	19960621 <--
	CN 1120834	B	20030910		
	JP 11508266	T2	19990721	JP 1997-504005	19960621 <--

RU 2172734	C2	20010827	RU 1998-100590	19960621 <--
ES 2192607	T3	20031016	ES 1996-923452	19960621 <--
PRAI US 1995-421P	P	19950622	<--	
US 1996-667099	A	19960620	<--	
WO 1996-US10920	W	19960621	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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WO 9700858	ICM	C07C319-18
	ICS	C07C323-22
WO 9700858	ECLA	C07C319/18
US 5905171	ECLA	C07C319/18
OS	CASREACT 126:157183	

AB: In the title process, a liquid reaction, medium containing 3-(methylthio)propanal and a catalyst for the reaction between Me mercaptan and acrolein, is contacted with a gaseous acrolein feed stream in a gas-liquid contact zone. The gaseous acrolein feed stream comprises acrolein vapor and noncondensable gas and the acrolein is transferred from the acrolein feed stream to the reaction medium. Me mercaptan, introduced into the reaction medium, reacts with the acrolein in that medium, producing a liquid reaction product containing 3-(methylthio)propanal. The noncondensable gas is then separated from the liquid reaction product the reaction product is divided into a produce fraction and a circulating fraction, and the circulating fraction is recycled to the gas/liquid contact zone. Process flow diagrams are presented.

ST: methylthiopropanal continuous prepn; acrolein reaction methylthiol prepn
methylthiopropanal

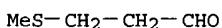
IT: Addition reaction
(of acrolein and Me mercaptan in the continuous preparation of
3-(methylthio)propanal)

IT: 3268-49-3P, 3-(Methylthio)propanal
RL: IMF (Industrial manufacture); SPN (Synthetic
preparation); PREP (Preparation)
(process for the continuous preparation of 3-(methylthio)
propanal from acrolein and Me mercaptan)

IT: 74-93-1, Methanethiol, reactions 107-02-8, Acrolein,
reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(process for the continuous preparation of 3-(methylthio)propanal from
acrolein and Me mercaptan)

IT: 3268-49-3P, 3-(Methylthio)propanal
RL: IMF (Industrial manufacture); SPN (Synthetic
preparation); PREP (Preparation)
(process for the continuous preparation of 3-(methylthio)
propanal from acrolein and Me mercaptan)

RN: 3268-49-3 HCPLUS
CN: Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)

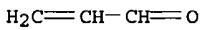


IT: 74-93-1, Methanethiol, reactions 107-02-8, Acrolein,
reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(process for the continuous preparation of 3-(methylthio)propanal from
acrolein and Me mercaptan)

RN: 74-93-1 HCPLUS
CN: Methanethiol (8CI, 9CI) (CA INDEX NAME)



RN: 107-02-8 HCPLUS
CN: 2-Propenal (9CI) (CA INDEX NAME)



L34 ANSWER 9 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
AN 1997:111227 HCPLUS
DN 126:117741
ED Entered STN: 17 Feb 1997

TI Processes and catalysts for the preparation of 3-(methylthio)propanal and 2-hydroxy-4-(methylthio)butanenitrile

IN Blackburn, Thomas F.; Pellegrin, Paul F.; Kranz, Allen H.

PA Novus International, Inc., USA

SO PCT Int. Appl., 36 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C07C319-18

ICS C07C319-20; C07C323-22; C07C323-60

CC 23-19 (Aliphatic Compounds)

Section cross-reference(s): 45, 67

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9640631	A1	19961219	WO 1996-US9060	19960604 <--
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML				
	US 5663409	A	19970902	US 1995-476356	19950607 <--
	US 5705675	A	19980106	US 1995-581249	19951229 <--
	AU 9659873	A1	19961230	AU 1996-59873	19960604 <--
	AU 714151	B2	19991223		
	EP 830341	A1	19980325	EP 1996-917222	19960604 <--
	EP 830341	B1	20010905		
	R: BE, DE, DK, ES, FR, GB, IT, LU, NL, MC, PT, IE				
	JP 11511119	T2	19990928	JP 1997-501471	19960604 <--
	RU 2173681	C2	20010920	RU 1998-100220	19960604 <--
PRAI	US 1995-476356	A	19950607		<--
	US 1995-581249	A	19951229		<--
	WO 1996-US9060	W	19960604		<--

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	WO 9640631	ICM	C07C319-18
		ICS	C07C319-20; C07C323-22; C07C323-60
	WO 9640631	ECLA	C07C319/18; C07C319/20

OS MARPAT 126:117741

AB 3-(Methylthio)propanal (I) is prepared by the addition reaction of MeSH with acrolein, 2-hydroxy-4-(methylthio)butanenitrile is prepared by the addition reaction of I with HCN, and both reactions are conducted in the presence of an addition reaction catalysts comprising .gtoreq.1 organic base(s) (e.g., triisopropanolamine, nicotinamide, imidazole, benzimidazole, 2-fluoropyridine, poly-4-vinylpyridine, 4-dimethylaminopyridine, picoline, pyrazine, trialkylamines, etc.).

ST hydroxymethylthiobutanenitrile prepn; methylthiopropanal prepn; addn reaction catalyst prepn hydroxymethylthiobutanenitrile

IT Addition reaction catalysts

(amines for the preparation of 3-(methylthio)propanal and 2-hydroxy-4-(methylthio)butanenitrile)

IT Amines, uses

RL: CAT (Catalyst use); USES (Uses)
(catalysts for the preparation of 3-(methylthio)propanal and 2-hydroxy-4-(methylthio)butanenitrile)

IT 51-17-2, Benzimidazole 98-92-0, Nicotinamide 102-69-2, Tripropylamine 122-20-3, Triisopropanolamine 150-59-4 288-32-4, Imidazole, uses 290-37-9, Pyrazine 372-48-5, 2-Fluoropyridine 1122-58-3, 4-Dimethylaminopyridine 1333-41-1, Picoline 13977-33-8, N-Methyldiphenylamine 25232-41-1, 4-Vinylpyridine homopolymer

RL: CAT (Catalyst use); USES (Uses)
(processes and catalysts for the preparation of 3-(methylthio)propanal and 2-hydroxy-4-(methylthio)butanenitrile)

IT 64-19-7, Acetic acid, reactions 74-90-8, Hydrogen cyanide, reactions 74-93-1, Methanethiol, reactions 107-02-8, Acrolein, reactions 7664-38-2, Phosphoric acid, reactions 7664-93-9, Sulfuric acid, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(processes and catalysts for the preparation of 3-(methylthio)propanal and 2-hydroxy-4-(methylthio)butanenitrile)

IT 3268-49-3P, 3-(Methylthio)propanal

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(processes and catalysts for the preparation of 3-(methylthio)

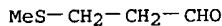
propanal and 2-hydroxy-4-(methylthio)butanenitrile)
IT 17773-41-0P, 2-Hydroxy-4-(methylthio)butanenitrile
RL: SPN (Synthetic preparation); PREP (Preparation)
(processes and catalysts for the preparation of 3-(methylthio)
propanal and 2-hydroxy-4-(methylthio)butanenitrile)
IT 74-93-1, Methanethiol, reactions 107-02-8, Acrolein,
reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(processes and catalysts for the preparation of 3-(methylthio)propanal and
2-hydroxy-4-(methylthio)butanenitrile)
RN 74-93-1 HCAPLUS
CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



RN 107-02-8 HCAPLUS
CN 2-Propenal (9CI) (CA INDEX NAME)



IT 3268-49-3P, 3-(Methylthio)propanal
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(processes and catalysts for the preparation of 3-(methylthio)
propanal and 2-hydroxy-4-(methylthio)butanenitrile)
RN 3268-49-3 HCAPLUS
CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



L34 ANSWER 10 OF 28 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:537082 HCAPLUS
DN 125:167345
ED Entered STN: 07 Sep 1996
TI Preparation of 2-hydroxy-4-(methylmercapto)butyric acid from acrolein and
methyl mercaptan without using sulfuric acid

IN Matsuoka, Kazuyuki
PA Daicel Chem, Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF

DT Patent
LA Japanese
IC ICM C07C323-52
ICS C07C319-18; C07C319-20
CC 23-17 (Aliphatic Compounds)
Section cross-reference(s): 17

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
PI JP 08157447	A2	19960618	JP 1993-159132	19930629 <--
JP 3169103	B2	20010521		
PRAI JP 1993-159132		19930629	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 08157447	ICM	C07C323-52
	ICS	C07C319-18; C07C319-20

AB MeS(CH₂)₂CH(OH)CO₂H (I), which is used as a feed additive, is prepared from CH₂:CHCHO and MeSH, via MeS(CH₂)₂CHO, MeS(CH₂)₂CH(OH)CN (II), MeS(CH₂)₂CH(OH)CONH₂ (III), and esters of MeS(CH₂)₂CH(OH)CO₂H. Hydration of II in aqueous Me₂CO in the presence of MnO₂ at 60.degree. for 6 h gave 89.0% III, which was autoclaved with MeOH and Pb nitrate at 170.degree. and 20 kg/cm² for 5 h with removing NH₃ to afford MeS(CH₂)₂CH(OH)CO₂Me at 83% conversion and 85% selectivity. Hydrolysis of the ester with Amberlyst 15 in H₂O at 95.degree. for 5 h gave I at 98.8% conversion and 97.1% selectivity.

ST hydroxymethylmercaptobutyrate prep feed additive; acrolein addn methyl mercaptan; hydroxymethylmercaptobutyronitrile hydration

IT Feed

(additive for; preparation of hydroxy(methylmercapto)butyric acid from acrolein and Me mercaptan without using sulfuric acid)

IT Hydration, chemical
 (hydration of hydroxy(methylmercapto)butyronitrile without using sulfuric acid in preparation of hydroxy(methylmercapto)butyric acid)

IT 74-90-8P, Prussic acid, preparation
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (in preparation of hydroxy(methylmercapto)butyric acid from acrolein and Me mercaptan without using sulfuric acid)

IT 583-91-5P, 2-Hydroxy-4-(methylmercapto)butyric acid
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (preparation of hydroxy(methylmercapto)butyric acid from acrolein and Me mercaptan without using sulfuric acid)

IT 3268-49-3P, 3-(Methylmercapto)propionaldehyde
 17773-41-0P, 2-Hydroxy-4-(methylthio)butyronitrile 49540-21-8P,
 2-Hydroxy-4-(methylthio)butyramide 52703-96-5P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of hydroxy(methylmercapto)butyric acid from acrolein and Me mercaptan without using sulfuric acid)

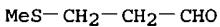
IT 74-93-1, Methyl mercaptan, reactions 107-02-8,
 2-Propenal, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of hydroxy(methylmercapto)butyric acid from acrolein and Me mercaptan without using sulfuric acid)

IT 7664-41-7P, Ammonia, preparation
 RL: BYP (Byproduct); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (recycling of; in preparation of hydroxy(methylmercapto)butyric acid from acrolein and Me mercaptan without using sulfuric acid)

IT 3268-49-3P, 3-(Methylmercapto)propionaldehyde
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of hydroxy(methylmercapto)butyric acid from acrolein and Me mercaptan without using sulfuric acid)

RN 3268-49-3 HCPLUS

CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



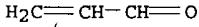
IT 74-93-1, Methyl mercaptan, reactions 107-02-8,
 2-Propenal, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of hydroxy(methylmercapto)butyric acid from acrolein and Me mercaptan without using sulfuric acid)

RN 74-93-1 HCPLUS

CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



RN 107-02-8 HCPLUS
 CN 2-Propenal (9CI) (CA INDEX NAME)



K34 ANSWER 11 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 1996:252233 HCPLUS
 DN 124:288769
 ED Entered STN: 30 Apr 1996
 TI Preparation of 3-(methylthio)propanal
 IN Hsu, Yung C.; Ruest, Dennis A.
 PA Novus International, Inc., USA
 SO PCT Int. Appl., 70 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C07C323-50
 ICS C07C323-51

CC 23-14 (Aliphatic Compounds)

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9601810	A1	19960125	WO 1995-US8532	19950706 <--
	W: AM, AT, AU, BB, BG, BR, BY, CA, CN, CZ, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LV, MD, MG, MN, MW, MX, NO, NZ, PL, RO, RU, SD, SG, SI, SK, TJ, TM, TT, UA, UG, UZ, VN				
	RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9530939	A1	19960209	AU 1995-30939	19950706 <--
	AU 699841	B2	19981217		
	EP 770062	A1	19970502	EP 1995-926631	19950706 <--
	R: BE, DE, DK, ES, FR, GB, IE, IT, LU, MC, NL, PT				
	CN 1152913	A	19970625	CN 1995-194068	19950706 <--
	JP 10504812	T2	19980512	JP 1996-504405	19950706 <--
	RU 2149159	C1	20000520	RU 1997-102147	19950706 <--
	CN 1222507	A	19990714	CN 1998-115072	19980624 <--
PRAI	US 1994-273216	A	19940711		
	WO 1995-US8532	W	19950706		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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WO 9601810	ICM	C07C323-50
	ICS	C07C323-51
WO 9601810	ECLA	C07C045/35+47/22; C07C319/18

AB The title process comprises condensation of CH₂:CHCHO from a feed stream in a gas/liquid contact zone containing MeSCH₂CH₂CHO, MeSH, and catalyst, separation of non-condensable material from the feed stream, and withdrawal of liquid which is divided into a product stream and a stream which is returned to the gas/liquid contact zone.

ST methylthiopropanal; acrolein addn methanethiol

IT 3268-49-3P, 3-(Methylthio)propanal

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of 3-(methylthio)propanal)

IT 74-93-1, Methanethiol, reactions 107-02-8, Acrolein, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of 3-(methylthio)propanal)IT 3268-49-3P, 3-(Methylthio)propanal
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of 3-(methylthio)propanal)

RN 3268-49-3 HCPLUS

CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



IT 74-93-1, Methanethiol, reactions 107-02-8, Acrolein, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of 3-(methylthio)propanal)

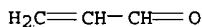
RN 74-93-1 HCPLUS

CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



RN 107-02-8 HCPLUS

CN 2-Propenal (9CI) (CA INDEX NAME)



L34 ANSWER 12 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN

AN 1995:183935 HCPLUS

DN 122:9491

ED Entered STN: 12 Nov 1994

TI Continuous process for preparation of 3-(methylthio)propanal from a

gaseous acrolein feed stream
 IN Hsu, Yung C.; Ruest, Dennis A.
 PA Novus International, Inc., USA

SO U.S., 16 pp.
 CODEN: USXXAM

DT Patent
 LA English
 IC ICM C07C323-50
 ICS C07C323-51

NCL 568041000

CC 23-14 (Aliphatic Compounds)

Section cross-reference(s): 45

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5352837	A	19941004	US 1993-73763	19930608 <--
	ZA 9305850	A	19940525	ZA 1993-5850	19930811 <--
	WO 9429254	A1	19941222	WO 1993-US8552	19930909 <--
	W: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, VN				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9351268	A1	19950103	AU 1993-51268	19930909 <--
	AU 673856	B2	19961128		
	BR 9307864	A	19960123	BR 1993-7864	19930909 <--
	EP 703890	A1	19960403	EP 1993-922171	19930909 <--
	EP 703890	B1	19990407		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	JP 09501145	T2	19970204	JP 1993-501709	19930909 <--
	RU 2118314	C1	19980827	RU 1996-100238	19930909 <--
	EP 889029	A2	19990107	EP 1998-114518	19930909 <--
	EP 889029	A3	20020313		
	R: BE, DE, DK, ES, FR, GB, IT, LU, NL, MC, PT, IE				
	AT 178594	E	19990415	AT 1993-922171	19930909 <--
	ES 2131120	T3	19990716	ES 1993-922171	19930909 <--
	CN 1096779	A	19941228	CN 1993-118591	19931009 <--
	CN 1041414	B	19981230		
	US 5637766	A	19970610	US 1995-557699	19951113 <--
	US 5925794	A	19990720	US 1996-668572	19960620 <--
	US 5744647	A	19980428	US 1996-679701	19960711 <--
	US 6031138	A	20000229	US 1998-102025	19980622 <--
	US 6320076	B1	20011120	US 1999-470407	19991222 <--
	US 2002173677	A1	20021121	US 2001-972748	20011005 <--
	US 6548701	B2	20030415		
PRAI	US 1993-73763	A	19930608		
	EP 1993-922171	A3	19930909		
	WO 1993-US8552	W	19930909		
	US 1994-273216	B1	19940711		
	US 1995-421P	P	19950622		
	US 1995-557699	A2	19951113		
	US 1996-667099	B1	19960620		
	US 1996-668572	B1	19960620		
	US 1998-102025	A3	19980622		
	US 1999-470407	A1	19991222		

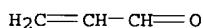
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5352837	ICM	C07C323-50
	ICS	C07C323-51
	NCL	568041000
WO 9429254	ECLA	C07C045/35+47/22; C07C045/78A; C07C045/81; C07C319/18
EP 889029	ECLA	C07C319/18
US 5744647	ECLA	C07C045/35+47/22
US 6031138	ECLA	C07C319/18
US 6320076	ECLA	C07C045/35+47/22; C07C045/78A; C07C045/81; C07C319/18
US 2002173677	ECLA	C07C045/35+47/22; C07C045/78A; C07C045/81; C07C319/18

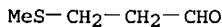
AB A process for the continuous preparation of 3-(methylthio)propanal. A liquid reaction medium is contacted with a gaseous acrolein feed stream in a gas/liquid contact zone. The reaction medium contains 3-(methylthio)propanal, Me mercaptan and a catalyst for the reaction between Me mercaptan and acrolein. The gaseous acrolein feed stream comprises acrolein vapor and non-condensable gas. Acrolein is transferred from the

acrolein feed stream to the reaction medium and reacts with Me mercaptan in that medium to produce a liquid reaction product containing 3-(methylthio)propanal. The non-condensable gas is separated from the liquid reaction product. The reaction product is divided into a product fraction and a circulating fraction, and the circulating fraction is recycled to the gas/liquid contact zone.

ST methylthiopropanal prep continuous process; propanal methylthio prep continuous process; acrolein reaction methyl mercaptan continuous process
IT 74-98-6P, Propane, preparation 75-07-0P, Acetaldehyde, preparation 79-10-7P, Acrylic acid, preparation 123-38-6P, Propanal, preparation
RL: BYP (Byproduct); PREP (Preparation)
(continuous process for preparation of 3-(methylthio)propanal from a gaseous acrolein feed stream)
IT 5153-63-9, Pyridinium acetate
RL: CAT (Catalyst use); USES (Uses)
(continuous process for preparation of 3-(methylthio)propanal from a gaseous acrolein feed stream)
IT 107-02-8P, Acrolein, preparation
RL: IMF (Industrial manufacture); RCT (Reactant);
SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)
(continuous process for preparation of 3-(methylthio)propanal from a gaseous acrolein feed stream)
IT 3268-49-3P, 3-(Methylthio)propanal
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(continuous process for preparation of 3-(methylthio)propanal from a gaseous acrolein feed stream)
IT 7732-18-5P, Water, preparation
RL: PNU (Preparation, unclassified); PREP (Preparation)
(continuous process for preparation of 3-(methylthio)propanal from a gaseous acrolein feed stream)
IT 74-93-1, Methyl mercaptan, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(continuous process for preparation of 3-(methylthio)propanal from a gaseous acrolein feed stream)
IT 115-07-1, Propylene, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation to acrolein; continuous process for preparation of 3-(methylthio)propanal from a gaseous acrolein feed stream)
IT 107-02-8P, Acrolein, preparation
RL: IMF (Industrial manufacture); RCT (Reactant);
SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)
(continuous process for preparation of 3-(methylthio)propanal from a gaseous acrolein feed stream)
RN 107-02-8 HCPLUS
CN 2-Propenal (9CI) (CA INDEX NAME)



IT 3268-49-3P, 3-(Methylthio)propanal
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(continuous process for preparation of 3-(methylthio)propanal from a gaseous acrolein feed stream)
RN 3268-49-3 HCPLUS
CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



IT 74-93-1, Methyl mercaptan, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(continuous process for preparation of 3-(methylthio)propanal from a gaseous acrolein feed stream)
RN 74-93-1 HCPLUS
CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



L34 ANSWER 13 OF 28 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1994:655416 HCAPLUS
 DN 121:255416
 ED Entered STN: 26 Nov 1994
 TI Phenyl amidine thio derivatives useful as platelet aggregation inhibitors
 IN Adams, Steven Paul; Lindmark, Richard John; Miyano, Masateru; Rico, Joseph Gerace
 PA G.D. Searle and Co., USA; Monsanto Co.
 SO PCT Int. Appl., 94 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C07C317-50
 ICS C07C323-59; C07D213-71; A61K031-155; A61K031-44
 CC 25-19 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 Section cross-reference(s): 1

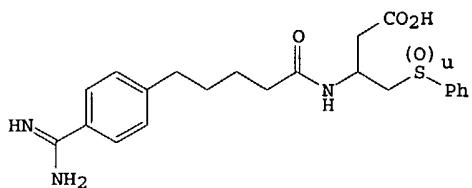
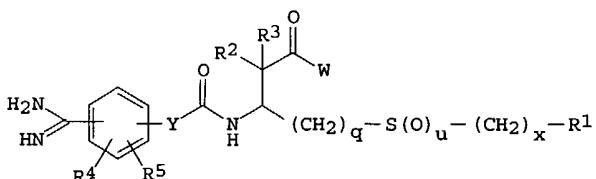
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9418162	A1	19940818	WO 1994-US600	19940131 <--
	W: AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, LV, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, UZ, VN				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	US 5409939	A	19950425	US 1993-17203	19930212 <--
	AU 9462299	A1	19940829	AU 1994-62299	19940131 <--
	US 5543425	A	19960806	US 1994-330486	19941028 <--
PRAI	US 1993-17203	A	19930212		<--
	WO 1994-US600	W	19940131		<--

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	WO 9418162	ICM	C07C317-50
		ICS	C07C323-59; C07D213-71; A61K031-155; A61K031-44
	US 5409939	ECLA	C07C317/28; C07C317/50; C07C323/59; C07D213/71
OS	MARPAT 121:255416		<--

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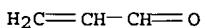


AB The invention relates to compds. I [R1 = alkyl, (un)substituted Ph, 5- or 6-membered heteroaryl containing 1 N, O, or S atom; R2, R3 = H, alkyl; R4, R5 = H, alkyl, alkoxy, halo; Y = alkylene, alkenylene, alkynylene; W = OR where R = H or alkyl; q = 1-4; u = 0-2; x = 0-3], which are useful in the inhibition of platelet aggregation. For example, alkylation of PhSH by ClCH₂COCH₂CO₂Me, reductive amination of the resulting PhSCH₂COCH₂CO₂Me, and hydrolysis, gave (.-.)-PhSCH₂CH(NH₂)CH₂CO₂H, which was coupled with p-[H₂NC(:NH)]C₆H₄(CH₂)₄CO₂H using di-N,N'-succinimidyl carbonate and DMAP, to give title compound (.-.)-II (u = 0). Stepwise oxidation with H₂O₂ in aqueous AcOH gave the sulfinyl compound (.-.)-II (u = 1) and then the sulfone (.-.)-II (u = 2). The latter had an IC₅₀ of 0.028 .mu.M for inhibition of collagen-induced aggregation in canine platelet-rich plasma in vitro.

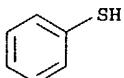
ST amidinophenyl thio prep platelet aggregation inhibitor
 IT Blood platelet aggregation inhibitors
 (preparation of Ph amidine thio derivs. as platelet aggregation inhibitors)
 IT 158510-09-9P 158510-15-7P 158510-23-7P 158510-27-1P 158510-31-7P
 158510-35-1P 158510-39-5P 158510-45-3P 158510-49-7P 158535-26-3P
 158570-13-9P
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (preparation of Ph amidine thio derivs. as platelet aggregation inhibitors)
 IT 158510-11-3P 158510-13-5P 158510-17-9P 158510-19-1P 158510-21-5P
 158510-25-9P 158510-29-3P 158510-33-9P 158510-37-3P 158510-41-9P
 158510-43-1P 158510-47-5P 158510-51-1P 158510-53-3P
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (preparation of Ph amidine thio derivs. as platelet aggregation inhibitors)
 IT 100-53-8, Benzyl mercaptan 107-02-8, Acrolein, reactions
 108-98-5, Thiophenol, reactions 371-42-6, p-Fluorothiophenol 590-17-0,
 Bromoacetonitrile 623-73-4, Ethyl diazoacetate 696-63-9,
 p-Methoxythiophenol 1071-46-1, Ethyl hydrogen malonate 1073-72-9,
 p-Methyl(thiophenol) 2637-34-5, 2-Mercaptopyridine 5188-07-8,
 Sodium thiometoxide 7022-45-9, 2-(Methylthio)benzaldehyde 7536-58-5,
 N-(tert-Butoxycarbonyl)aspartic acid, .beta.-benzyl ester 32807-28-6,
 Methyl 4-chloroacetoacetate 152151-37-6, 5-(p-Amidinophenyl)pentanoic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of Ph amidine thio derivs. as platelet aggregation inhibitors)
 IT 3268-49-3P, 3-(Methylthio)propionaldehyde
 21681-88-9P, p-Tolylthioacetonitrile 42404-23-9P, 1-Amino-2-(4-tolylthio)ethane 71483-05-1P, 4-(Phenylthio)-3-oxobutanoic acid
 79069-16-2P, (S)-Benzyl 3-(tert-butoxycarbonylamino)-4-hydroxybutyrate
 118123-92-5P, 5-(Methylthio)-3-oxopentanoic acid 118743-11-6P
 149193-64-6P, (S)-Benzyl 3-(tert-butoxycarbonylamino)-4-(methylsulfonyloxy)butyrate 158510-54-4P, (.+.-)-3-Amino-5-(benzylthio)pentanoic acid 158510-55-5P 158510-56-6P,
 (.+.-)-3-Amino-4-(4-methylphenylthio)butanoic acid 158510-57-7P,
 (.+.-)-3-Amino-4-(4-methylphenylthio)butanoic acid methyl ester 158510-58-8P, (.+.-)-3-Amino-4-(4-methoxyphenylthio)butanoic acid
 158510-59-9P 158510-60-2P, (.+.-)-3-Amino-4-(4-methoxyphenylthio)butanoic acid methyl ester 158510-61-3P
 158510-62-4P, (.+.-)-3-Amino-4-(4-fluorophenylthio)butanoic acid methyl ester 158510-63-5P, (.+.-)-3-Amino-4-(2-pyridylthio)butanoic acid
 158510-64-6P 158510-65-7P, (.+.-)-3-Amino-4-(2-pyridylthio)butanoic acid methyl ester 158510-66-8P, (.+.-)-3-Amino-4-(phenylthio)butanoic acid
 158510-68-0P, (.+.-)-3-Amino-3-[2-(methylthio)phenyl]propanoic acid
 158510-69-1P, (S)-Benzyl 3-amino-4-(2-pyridylsulfonyl)butyrate
 158510-70-4P, (S)-Benzyl 3-(tert-butoxycarbonylamino)-4-(2-pyridylthio)butyrate 158570-14-0P, (.+.-)-3-Amino-5-(methylthio)pentanoic acid 158702-52-4P, (.+.-)-3-Amino-4-(4-fluorophenylthio)butanoic acid 170726-32-6P, (.+.-)-3-Amino-4-(phenylthio)butanoic acid methyl ester
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of Ph amidine thio derivs. as platelet aggregation inhibitors)
 IT 100-53-8, Benzyl mercaptan 107-02-8, Acrolein, reactions
 108-98-5, Thiophenol, reactions 371-42-6,
 p-Fluorothiophenol 696-63-9, p-Methoxythiophenol 5188-07-8, Sodium thiometoxide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of Ph amidine thio derivs. as platelet aggregation inhibitors)
 RN 100-53-8 HCPLUS
 CN Benzenemethanethiol (9CI) (CA INDEX NAME)



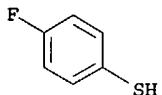
RN 107-02-8 HCPLUS
 CN 2-Propenal (9CI) (CA INDEX NAME)



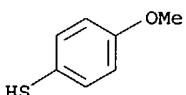
RN 108-98-5 HCAPLUS
 CN Benzenethiol (8CI, 9CI) (CA INDEX NAME)



RN 371-42-6 HCAPLUS
 CN Benzenethiol, 4-fluoro- (9CI) (CA INDEX NAME)



RN 696-63-9 HCAPLUS
 CN Benzenethiol, 4-methoxy- (9CI) (CA INDEX NAME)



RN 5188-07-8 HCAPLUS
 CN Methanethiol, sodium salt (8CI, 9CI) (CA INDEX NAME)

H₃C-SH

● Na

IT 3268-49-3P, 3-(Methylthio)propionaldehyde
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (preparation of Ph amidine thio derivs. as platelet aggregation inhibitors)
 RN 3268-49-3 HCAPLUS
 CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)

MeS-CH₂-CH₂-CHO

L34 ANSWER 14 OF 28 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1994:133858 HCAPLUS
 DN 120:133858
 ED Entered STN: 19 Mar 1994
 TI Process for producing 2-hydroxy-4-methylthiobutanoic acid
 IN Matsuoka, Kazuyuki
 PA Daicel Chemical Industries, Ltd., Japan
 SO PCT Int. Appl., 21 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 IC ICM C07C323-52
 CC 23-16 (Aliphatic Compounds)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9323372	A1	19931125	WO 1993-JP659	19930520 <--
	W: US				
	RW: BE, DE, FR, GB				
JP	06049020	A2	19940222	JP 1993-143026	19930520 <--
JP	3219544	B2	20011015		
EP	601195	A1	19940615	EP 1993-910360	19930520 <--

EP 601195	B1	19960828		
R: BE, DE, FR, GB				
CN 1084511	A	19940330	CN 1993-107598	19930521 <--
CN 1036391	B	19971112		
US 5386056	A	19950131	US 1994-178315	19940112 <--
PRAI JP 1992-155802	A	19920521	<--	
WO 1993-JP659	W	19930520	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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WO 9323372	ICM	C07C323-52	
EP 601195	ECLA	C07C319/18; C07C319/20	<--
US 5386056	ECLA	C07C319/18; C07C319/20	<--

OS CASREACT 120:133858

AB A process for producing 2-hydroxy-4-methylthiobutanoic acid (I) together with methanol comprises hydrating 2-hydroxy-4-methylthiobutyronitrile (II) into 2-hydroxy-4-methylthiobutanamide (III), reacting the amide with Me formate to yield Me 2-hydroxy-4-methylthiobutanoate (IV) and formamide, and hydrolyzing the Me ester. The discharge of a large amount of ammonium sulfate can be prevented, because no sulfuric acid is used as the reactant. The byproduct formamide and methanol are utilizable as the starting material of the reaction after converting them into HCN and Me formate, resp. Thus, addition of MeSH to acrolein in the presence of Cu(OAc)₂ and hydroquinone and addition of the resulting 3-methylthiopropionaldehyde with HCN in the presence of NaOH in MeOH gave II. Hydration of II in the presence of MnO₂ in aqueous acetone at 60.degree. for 6 h to give III which was reacted with HCO₂Me in MeOH containing MeONa to give IV and the byproduct formamide. Hydrolysis of IV in the presence of Amberlyst 15 in H₂O at 95.degree. gave I, while the byproduct MeOH was recovered. Formamide was fed into a stainless steel reactor packed with alumina at 500.degree. to give HCN. MeOH was contacted with a catalyst prepared from Cu(NO₃)₂ and ammonium chromate in a stainless steel reactor to give Me formate.

ST hydroxymethylthiobutanoic acid prep; hydroxymethylthiobutyronitrile hydration; hydroxymethylthiobutanamide esterification methyl formate

IT 107-02-8, Acrolein, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition of, with methanethiol)

IT 74-90-8, Hydrogen cyanide, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition of, with methylthiopropionaldehyde)

IT 74-93-1, Methanethiol, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction of, with acrolein)

IT 3251-23-8, Copper nitrate

RL: CAT (Catalyst use); USES (Uses)
(catalyst from ammonium chromate and, for conversion of methanol into Me formate)

IT 7788-98-9, Ammonium chromate

RL: CAT (Catalyst use); USES (Uses)
(catalyst from copper nitrate and, for conversion of methanol into Me formate)

IT 1344-28-1, Alumina, uses

RL: CAT (Catalyst use); USES (Uses)
(catalyst, for dehydration of formamide to hydrogen cyanide)

IT 107-31-3, Methyl formate

RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification by, of hydroxymethylthiobutanamide)

IT 67-56-1P, Methanol, reactions

RL: SPN (Synthetic preparation); PREP (Preparation)
(formation and conversion of, into Me formate, in preparation of hydroxy(methylthio)butanoic acid)

IT 75-12-7P, Formamide, reactions

RL: SPN (Synthetic preparation); PREP (Preparation)
(formation and conversion of, into hydrogen cyanide, in preparation of hydroxy(methylthio)butanoic acid)

IT 3268-49-3P, 3-Methylthiopropionaldehyde

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and addition of, with hydrogen cyanide)

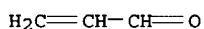
IT 49540-21-8P, 2-Hydroxy-4-methylthiobutanamide

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and esterification of, by Me formate)

IT 17773-41-0P, 2-Hydroxy-4-methylthiobutyronitrile

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and hydration of)

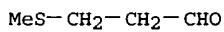
IT 52703-96-5P, Me 2-hydroxy-4-methylthiobutanoate
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and saponification of)
 IT 583-91-5P, 2-Hydroxy-4-methylthiobutanoic acid
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, via addition of acrolein with methanethiol and hydrogen cyanide and hydration and esterification of hydroxymethylthiobutanamide)
 IT 107-02-8, Acrolein, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition of, with methanethiol)
 RN 107-02-8 HCAPLUS
 CN 2-Propenal (9CI) (CA INDEX NAME)



IT 74-93-1, Methanethiol, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction of, with acrolein)
 RN 74-93-1 HCAPLUS
 CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



IT 3268-49-3P, 3-Methylthiopropionaldehyde
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and addition of, with hydrogen cyanide)
 RN 3268-49-3 HCAPLUS
 CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



L34 ANSWER 15 OF 28 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1990:630786 HCAPLUS
 DN 113:230786
 ED Entered STN: 22 Dec 1990
 TI Photochemical preparation of 3-(organothio)aldehydes from a mercaptan and .alpha.,.beta.-unsaturated aliphatic aldehydes
 IN Sandler, Stanley R.
 PA Pennwalt Corp., USA
 SO U.S., 3 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM B01J019-08
 NCL 204157760
 CC 23-14 (Aliphatic Compounds)
 Section cross-reference(s): 5, 62
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4944853	A	19900731	US 1989-405784	19890911 <--
IN 173789	A	19940716	IN 1990-CA292	19900409 <--
JP 03184952	A2	19910812	JP 1990-94184	19900411 <--
EP 417386	A1	19910320	EP 1990-107565	19900420 <--
R: BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				
AU 9053784	A1	19910411	AU 1990-53784	19900423 <--
AU 631202	B2	19921119		
BR 9001870	A	19911112	BR 1990-1870	19900423 <--
PRAI US 1989-405784	A	19890911	<--	

 CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 4944853	ICM	B01J019-08
	NCL	204157760

 OS CASREACT 113:230786; MARPAT 113:230786
 AB 3-(Organothio)aldehydes R₁CH(SR₂)CH₂CHO (I; R₁ = H, C₁₋₇ alkyl; R₂ = C₁₋₁₂ alkyl, C₅₋₆ cycloalkyl, C₆₋₁₂ aryl or alkaryl), useful as intermediates

for the preparation of pesticides and antioxidants and as odorant or flavoring agents, are prepared by reaction of a mercaptan with substantially equimolar amount of .alpha.,.beta.-unsatd. aliphatic aldehyde at .apprx.2.degree.-60.degree. in the absence of O-containing gas. Thus, a solution of 3.0 mol EtSH and 3.0 mol crotonaldehyde was cooled to 2-20.degree. and was photolyzed in a 500 mL borosilicate reactor under the irradiation with a 450 W Hanovia high-pressure Hg lamp, while a slow stream of N was passed into the reactor. I (R1 = Me, R2 = Et) was obtained in 55.2% yield.

ST unsatd aldehyde photochem addn mercaptan

IT Antioxidants

Pesticides

(intermediates for, .gamma.- (organothio) alkanals as)

IT Addition reaction

(photochem., of .alpha.,.beta.-unsatd. aldehydes with mercaptans)

IT 4170-30-3, Crotonaldehyde

RL: RCT (Reactant); RACT (Reactant or reagent)
(photochem. addition of, with Et mercaptan)

IT 107-02-8, Acrolein, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(photochem. addition of, with Me mercaptan)

IT 74-93-1, Methyl mercaptan, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(photochem. addition of, with acrolein)

IT 75-08-1, Ethyl mercaptan

RL: RCT (Reactant); RACT (Reactant or reagent)
(photochem. addition of, with crotonaldehyde)

IT 3268-49-3P, 3-(Methylthio)propanal

27205-24-9P, 3-(Ethylthio)butanal

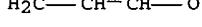
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, photochem. addition in)

IT 107-02-8, Acrolein, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(photochem. addition of, with Me mercaptan)

RN 107-02-8 HCPLUS

CN 2-Propenal (9CI) (CA INDEX NAME)



IT 74-93-1, Methyl mercaptan, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(photochem. addition of, with acrolein)

RN 74-93-1 HCPLUS

CN Methanethiol (8CI, 9CI) (CA INDEX NAME)

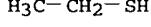


IT 75-08-1, Ethyl mercaptan

RL: RCT (Reactant); RACT (Reactant or reagent)
(photochem. addition of, with crotonaldehyde)

RN 75-08-1 HCPLUS

CN Ethanethiol (8CI, 9CI) (CA INDEX NAME)

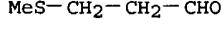


IT 3268-49-3P, 3-(Methylthio)propanal

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, photochem. addition in)

RN 3268-49-3 HCPLUS

CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



L34 ANSWER 16 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN

AN 1985:487504 HCPLUS

DN 103:87504

ED Entered STN: 22 Sep 1985

TI Continuous preparation of .beta.-methylmercaptopropionaldehyde

IN Pavlovscchi, Ana Maria; Levinta, Lucia; Gross, Gernot Holger
 PA Combinatul Petrochimic, Pitesti, Rom.

SO Rom., 2 pp.

CODEN: RUXXA3

DT Patent

LA Romanian

IC ICM C07C151-00

CC 23-14 (Aliphatic Compounds)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI RO 85095	B	19840924	RO 1982-106977	19820322 <--
PRAI RO 1982-106977		19820322		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
RO 85095	ICM	C07C151-00

AB The addition reaction of CH₂:CHCHO with MeSH at atmospheric pressure at 30-45.degree. gave MeSCH₂CH₂CHO in high yields.

ST addn acrolein methanethiol; propionaldehyde methylthio; methylthiopropionaldehyde

IT Addition reaction
(of acrolein with methanethiol)

IT 74-93-1, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(addition of, with acrolein)

IT 107-02-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(addition of, with methanethiol)

IT 3268-49-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 74-93-1, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(addition of, with acrolein)

RN 74-93-1 HCPLUS

CN Methanethiol (8CI, 9CI) (CA INDEX NAME)

H₃C—SH

IT 107-02-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(addition of, with methanethiol)

RN 107-02-8 HCPLUS

CN 2-Propenal (9CI) (CA INDEX NAME)

H₂C=CH—CH=O

IT 3268-49-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 3268-49-3 HCPLUS

CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)

MeS—CH₂—CH₂—CHO

L34 ANSWER 17 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN

AN 1984:105476 HCPLUS

DN 100:105476

ED Entered STN: 12 May 1984

TI New process solved handling problems

AU Niklasson, Rune

CS Rhone-Poulenc, Fr.

SO Kemisk Tidskrift (1969-1993) (1983), 95(12), 33

CODEN: KETIAL; ISSN: 0039-6605

DT Journal

LA Swedish

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

Section cross-reference(s): 34

AB The handling of toxic, flammable acrolein [107-02-8] in the manufacture of methionine [59-51-8] via MeSCH₂CH₂CHO (I) [3268-49-3] is minimized by in-plant synthesis of acrolein (from propene) and absorption in I prior to reaction with MeSH [74-93-1] to give I.

ST acrolein prepn conversion methylthiopropanal; methylthiopropanal prepn conversion methionine; methionine manuf acrolein methylthiopropanal; propanal methylthio prepn conversion methionine

IT Amino acids, preparation
 RL: PREP (Preparation)
 (manufacture of methionine, from (methylthio)propanal, with min. handling of acrolein)

IT 59-51-8P
 RL: PREP (Preparation)
 (manufacture of, from (methylthio)propanal, with min. handling of acrolein)

IT 3268-49-3P
 RL: PREP (Preparation)
 (preparation and conversion to methionine)

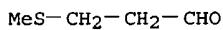
IT 107-02-8P, preparation
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction with methanethiol, in manufacture of methionine)

IT 74-93-1, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with acrolein)

IT 3268-49-3P
 RL: PREP (Preparation)
 (preparation and conversion to methionine)

RN 3268-49-3 HCPLUS

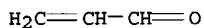
CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



IT 107-02-8P, preparation
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction with methanethiol, in manufacture of methionine)

RN 107-02-8 HCPLUS

CN 2-Propenal (9CI) (CA INDEX NAME)



IT 74-93-1, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with acrolein)

RN 74-93-1 HCPLUS

CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



L34 ANSWER 18 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 1982:492707 HCPLUS
 DN 97:92707
 ED Entered STN: 12 May 1984
 TI Secondary transformations of .beta.-methylmercaptopropionaldehyde in methionine production
 AU Balakin, V. S.; Gorbunov, B. N.; Zvegintseva, G. B.; Romanova, L. S.
 CS USSR
 SO Khimicheskaya Promyshlennost (Moscow, Russian Federation) (1982), (2), 84-5
 CODEN: KPRMAW; ISSN: 0023-110X
 DT Journal
 LA Russian
 CC 34-2 (Amino Acids, Peptides, and Proteins)
 AB Condensation of MeSH and acrolein gave MeSCH₂CH₂CHO (I), which was converted to methionine by condensation with NH₃ and HCN. By-products in the formation of I were the oligomer HO[CH(CH₂CH₂SMe)₂O]_x and aldol condensation products of I. The effects of reaction conditions on the rate of formation and extent of formation of these by-products were determined

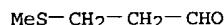
ST methylmercaptopropionaldehyde methionine intermediate; methylthiopropanal byproduct formation; oligomer acetal methylthiopropanal; aldol condensation methylthiopropanal; methional byproduct formation
 IT 74-93-1, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction of, with acrolein)
 IT 107-02-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction of, with methanethiol)
 IT 82764-99-6P
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, as by-product in reactions of methional)
 IT 3268-49-3P
 RL: SPN (Synthetic preparation); FORM (Formation,
 nonpreparative); PREP (Preparation)
 (formation of, as intermediate in preparation of methionine)
 IT 59-51-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, from methylthiopropanal, by-products in)
 IT 74-93-1, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction of, with acrolein)
 RN 74-93-1 HCPLUS
 CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



IT 107-02-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction of, with methanethiol)
 RN 107-02-8 HCPLUS
 CN 2-Propenal (9CI) (CA INDEX NAME)



IT 3268-49-3P
 RL: SPN (Synthetic preparation); FORM (Formation,
 nonpreparative); PREP (Preparation)
 (formation of, as intermediate in preparation of methionine)
 RN 3268-49-3 HCPLUS
 CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



L34 ANSWER 19 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 1981:191700 HCPLUS
 DN 94:191700
 ED Entered STN: 12 May 1984
 TI Direct preparation of .beta.-methylthiopropionaldehyde
 IN Komorn, Yves; Schwachhofer, Ghislain
 PA Rhone-Poulenc Industries S. A., Fr.
 SO Eur. Pat. Appl., 13 pp.
 CODEN: EPXXDW
 DT Patent
 LA French
 IC C07C149-14
 CC 23-14 (Aliphatic Compounds)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 22697	A1	19810121	EP 1980-400951	19800625 <--
	EP 22697	B1	19811230		
	R: BE, CH, DE, FR, GB, IT, NL, SE				
	FR 2460925	A1	19810130	FR 1979-17827	19790710 <--
	FR 2460925	B1	19810814		
	US 4319047	A	19820309	US 1980-164539	19800702 <--
	BR 8004260	A	19810127	BR 1980-4260	19800709 <--
	ES 493224	A1	19810416	ES 1980-493224	19800709 <--
	CA 1138896	A1	19830104	CA 1980-355801	19800709 <--

SU 1318153	A3	19870615	SU 1980-2948390	19800709 <--
JP 56053648	A2	19810513	JP 1980-93336	19800710 <--
JP 57008098	B4	19820215		
PRAI FR 1979-17827	A	19790710	<--	

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

EP 22697 IC C07C149-14

AB Acrolein, prepared by air oxidation of propylene, was purified and treated with MeSH to yield MeSCH₂CH₂CHO in an apparatus which is described. The acrylic acid impurity was removed from the acrolein by countercurrent washing in water or solvent; the water was removed by condensation and the condensate was partially vaporized to recover acrolein.

ST methylthiopropionaldehyde; propionaldehyde methylthio; acrylic acid removal acrolein; acrolein addn methanethiol

IT 74-93-1, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction of, with acrolein)

IT 107-02-8P, reactions

RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and addition reaction of, with methanethiol)

IT 3268-49-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 74-93-1, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction of, with acrolein)

RN 74-93-1 HCPLUS

CN Methanethiol (8CI, 9CI) (CA INDEX NAME)

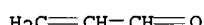


IT 107-02-8P, reactions

RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(preparation and addition reaction of, with methanethiol)

RN 107-02-8 HCPLUS

CN 2-Propenal (9CI) (CA INDEX NAME)

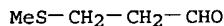


IT 3268-49-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 3268-49-3 HCPLUS

CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



L34 ANSWER 20 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN

AN 1977:120784 HCPLUS

DN 86:120784

ED Entered STN: 12 May 1984

TI .beta.-Methylthiopropionaldehyde

IN Biola, Georges; Komorn, Yves; Limongi, Eric

PA Rhone-Poulenc S. A., Fr.

SO Ger. Offen., 12 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C07C149-14

CC 23-14 (Aliphatic Compounds)

FAN.CNT 1

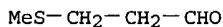
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2627430	A1	19761223	DE 1976-2627430	19760618 <--
	DE 2627430	B2	19770721		
	DE 2627430	C3	19850110		

FR 2314917	A1	19770114	FR 1975-20183	19750620 <--
SU 691086	D	19791005	SU 1976-2370202	19760615 <--
US 4225516	A	19800930	US 1976-696432	19760615 <--
JP 52003013	A2	19770111	JP 1976-70901	19760616 <--
JP 57000317	B4	19820106		
ES 448918	A1	19770701	ES 1976-448918	19760616 <--
BE 843077	A1	19761217	BE 1976-168033	19760617 <--
NL 7606580	A	19761222	NL 1976-6580	19760617 <--
NL 184517	B	19890316		
NL 184517	C	19890816		
SE 7607035	A	19761221	SE 1976-7035	19760618 <--
SE 431089	B	19840116		
SE 431089	C	19840426		
BR 7603949	A	19770322	BR 1976-3949	19760618 <--
CH 610882	A	19790515	CH 1976-7831	19760618 <--
CA 1069536	A1	19800108	CA 1976-255246	19760618 <--
PRAI FR 1975-20183		19750620 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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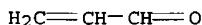
DE 2627430	IC	C07C149-14
AB	The waste gas from acrolein (I) synthesis containing .apprx.5% I was freed from H ₂ C:CHCO ₂ H and H ₂ O and dissolved in MeSCH ₂ CH ₂ CHO (II), then treated with MeSH at .apprx.30.degree. to give MeSCH ₂ CH ₂ C(SMe)OH, which was maintained at .apprx.0.15% in the solution. The combined yield of II was 99%.	
ST	propionaldehyde methylthio; methylthiopropionaldehyde	
IT	3268-49-3P RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)	
IT	74-93-1, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with acrolein)	
IT	107-02-8, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with methyl mercaptan)	
IT	3268-49-3P RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)	
RN	3268-49-3 HCPLUS	
CN	Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)	



IT	74-93-1, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with acrolein)	
RN	74-93-1 HCPLUS	
CN	Methanethiol (8CI, 9CI) (CA INDEX NAME)	



IT	107-02-8, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with methyl mercaptan)	
RN	107-02-8 HCPLUS	
CN	2-Propenal (9CI) (CA INDEX NAME)	

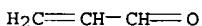


L34 ANSWER 21 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 1976:576769 HCPLUS
 DN 85:176769
 ED Entered STN: 12 May 1984
 TI Development of a continuous method for preparation of 3-(methylthio)propionaldehyde
 AU Zvegintseva, G. B.; Medvedev, A. I.; Reimer, M. I.; Dyadchenko, M. A.
 CS Nauchno-Issled. Inst. Khim. Polim. Mater., Tambov, USSR
 SO Tezisy Dokl. Nauchn. Sess. Khim. Tekhnol. Org. Soedin. Sery Sernistykh Neftei, 13th (1974), 343. Editor(s): Gal'pern, G. D. Publisher:

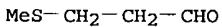
"Zinatne", Riga, USSR.
 CODEN: 33SUAA
 DT Conference
 LA Russian
 CC 23-14 (Aliphatic Compounds)
 AB A math. model was used to optimize a continuous process for MeSCH₂CH₂CHO
 (I) synthesis by reacting MeSH with acrolein (II); I was saturated with MeSH,
 and the resulting solution was treated with II in the presence of Et₃N.
 ST methylthio propionaldehyde model optimization; addn methanethiol acrolein
 model optimization
 IT Optimization
 Simulation model
 (of (methylthio)propionaldehyde synthesis by addition reaction of
 methanethiol with acrolein)
 IT Addition reaction
 (of methylmercaptan with acrolein, simulation, optimization, and
 catalysis of)
 IT Addition reaction catalysts
 (triethylamine, for methylmercaptan with acrolein)
 IT 74-93-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction of, with acrolein, (methylthio)propionaldehyde by,
 catalysis, simulation, and optimization of)
 IT 107-02-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with methanethiol, catalysis, simulation, and
 optimization of)
 IT 3268-49-3P
 RL: PREP (Preparation)
 (by addition reaction of methanethiol with acrolein, catalysis,
 simulation, and optimization of)
 IT 121-44-8, uses and miscellaneous
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst, for addition reaction of methanethiol with acrolein, simulation
 and optimization with)
 IT 74-93-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction of, with acrolein, (methylthio)propionaldehyde by,
 catalysis, simulation, and optimization of)
 RN 74-93-1 HCPLUS
 CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



IT 107-02-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with methanethiol, catalysis, simulation, and
 optimization of)
 RN 107-02-8 HCPLUS
 CN 2-Propenal (9CI) (CA INDEX NAME)



IT 3268-49-3P
 RL: PREP (Preparation)
 (by addition reaction of methanethiol with acrolein, catalysis,
 simulation, and optimization of)
 RN 3268-49-3 HCPLUS
 CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)

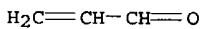


L34 ANSWER 22 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 1976:523278 HCPLUS
 DN 85:123278
 ED Entered STN: 12 May 1984
 TI Peroxide initiation of the reaction of mercaptans with unsaturated
 compounds
 AU Rykov, B. K.; Sizov, S. Yu.; Sukhanov, S. V.

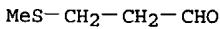
CS Volzh. Zavod. Org. Sint., Volzhsk, USSR
 SO Tezisy Dokl. Nauchn. Sess. Khim. Tekhnol. Org. Soedin. Sery Sernistykh Neftei, 13th (1974), 343. Editor(s): Gal'pern, G. D. Publisher: "Zinatne", Riga, USSR.
 CODEN: 33SUAA
 DT Conference
 LA Russian
 CC 23-9 (Aliphatic Compounds)
 AB RSH (R = lower alkyl, e.g., Me) addition to unsatd. compds. (e.g., acrolein) to give the corresponding sulfides (e.g., MeSCH₂CH₂CHO) was initiated by organic peroxides; .alpha.-haloacyl peroxides were recommended.
 ST addn mercaptan unsatd compd; methanethiol addn acrolein initiator; peroxide initiator mercaptan addn acrolein; sulfide methyl formylethyl
 IT Unsaturated compounds
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction of mercaptans with, initiator for)
 IT Thiols, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with unsatd. compds.)
 IT Sulfides, preparation
 RL: PREP (Preparation)
 (by addition reaction of mercaptans with unsatd. compds., initiator for)
 IT Addition reaction catalysts
 (haloacyl peroxides, initiators, for mercaptans with unsatd. compds.)
 IT Peroxides, uses and miscellaneous
 RL: USES (Uses)
 (haloacyl, initiators, for addition reaction of mercaptans with unsatd. compds.)
 IT Addition reaction
 (of mercaptans with unsatd. compds.)
 IT 74-93-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with acrolein, initiator for)
 IT 107-02-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with methyl mercaptan, initiator for)
 IT 3268-49-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 IT 74-93-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with acrolein, initiator for)
 RN 74-93-1 HCPLUS
 CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



IT 107-02-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with methyl mercaptan, initiator for)
 RN 107-02-8 HCPLUS
 CN 2-Propenal (9CI) (CA INDEX NAME)



IT 3268-49-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 3268-49-3 HCPLUS
 CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



L34 ANSWER 23 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 1975:409198 HCPLUS
 DN 83:9198
 ED Entered STN: 12 May 1984
 TI S-Substituted mercaptopropionaldehyde
 IN Ito, Hiroo; Kimura, Kaoru; Yamada, Akira

PA Toa Gosei Chemical Industry Co., Ltd.
 SO Jpn. Tokkyo Koho, 3 pp.
 CODEN: JAXXAD

DT Patent

LA Japanese

IC C07C; B01J

CC 23-14 (Aliphatic Compounds)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 49024045	B4	19740620	JP 1970-43681	19700523 <--
PRAI	JP 1970-43681		19700523	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 49024045	IC	C07CIC B01J

AB Cr(OAc)3.H2O and n-dodecylmercaptan were kept 1 hr at 30.degree. with acrolein, containing a polymerization inhibitor (e.g. hydroquinone), to give 82.1% .beta.-n-dodecylthiopropionaldehyde. The reaction of RSH (R = Me, Et, Bu, Ph) with RCH:CR1CHO (R = H, R1 = H, Me; R = Me, R1 = H) and inorg. Cr salts were also discussed.

ST addn mercaptan unsatd aldehyde; mercaptopropionaldehyde substituted; propionaldehyde mercapto substituted; dodecylthiopropionaldehyde

IT Aldehydes, preparation

RL: PREP (Preparation)
 (S-substituted mercapto-)

IT Thiols, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with unsatd. aldehydes)

IT Addition reaction catalysts

(chromium salts, for thiols with unsatd. aldehydes)

IT 55154-15-9 55184-91-3

RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction catalyst, for mercaptan with acroleins)

IT 123-54-6D, 2,4-Pentanedione, chromium complexes 1066-30-4 7440-47-3D,
 Chromium, 2,4-pentanedione complexes 10103-47-6 39345-92-1

RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction catalyst, for mercaptans with acroleins)

IT 74-93-1 75-08-1 108-98-5 109-79-5

112-55-0

RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with acrolein)

IT 78-85-3 107-02-8, reactions 4170-30-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(addition reaction with thiols, catalysts for)

IT 3268-49-3P 19378-51-9P 27098-65-3P 38160-52-0P 38160-57-5P

55154-14-8P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

IT 74-93-1 75-08-1 108-98-5 109-79-5

112-55-0

RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with acrolein)

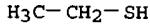
RN 74-93-1 HCPLUS

CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



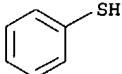
RN 75-08-1 HCPLUS

CN Ethanethiol (8CI, 9CI) (CA INDEX NAME)



RN 108-98-5 HCPLUS

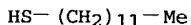
CN Benzenethiol (8CI, 9CI) (CA INDEX NAME)



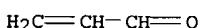
RN 109-79-5 HCAPLUS
 CN 1-Butanethiol (8CI, 9CI) (CA INDEX NAME)



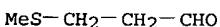
RN 112-55-0 HCAPLUS
 CN 1-Dodecanethiol (7CI, 8CI, 9CI) (CA INDEX NAME)



IT 107-02-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with thiols, catalysts for)
 RN 107-02-8 HCAPLUS
 CN 2-Propenal (9CI) (CA INDEX NAME)



IT 3268-49-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 3268-49-3 HCAPLUS
 CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



L34 ANSWER 24 OF 28 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1975:409197 HCAPLUS
 DN 83:9197
 ED Entered STN: 12 May 1984
 TI .beta.-Methylthiopropionaldehyde and its alkyl derivatives
 IN Ohuchi, Shunji; Shibuya, Kazumasa
 PA Asahi Chemical Industry Co., Ltd.
 SO Jpn. Tokkyo Koho, 3 pp.
 CODEN: JAXXAD
 DT Patent
 LA Japanese
 IC C07C; B01J
 CC 23-14 (Aliphatic Compounds)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 49024046	B4	19740620	JP 1970-78498	19700909 <--
PRAI JP 1970-78498		19700909		<--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 49024046	IC C07CIC B01J	

AB MeSH was added to RCH:CR1COR2 (R, R1, R2 = H, alkyl) in EtOH containing .beta.-PhNHC10H7, NH4O2CNH2, NH4HCO3, (NH4)2CO3, NH4Cl-NaHCO3, or NH3-CO2 at 10-20.degree. to give .ltoreq. 90% MesCHRCHR1COR2.

ST addn methylmercaptan acrolein; catalyst addn methylmercaptan acrolein; thiol addn acrolein deriv

IT Addition reaction catalysts
 (ammonium bicarbonate-phenylnaphthylamine, for acrolein and methylmercaptan)

IT Addition reaction
 (of methylmercaptan with acrolein, (methylthio)propionaldehydes from)

IT 74-93-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction of, with acrolein, catalyst for)

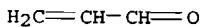
IT 107-02-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with methylmercaptan, catalysts for)

IT 3268-49-3P
 RL: PREP (Preparation)

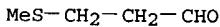
(by addition reaction of methylmercaptan with acrolein, catalyst for)
IT 506-87-6 1111-78-0
RL: CAT (Catalyst use); USES (Uses)
(catalyst, for addition reaction of methylmercaptan with acrolein)
IT 124-38-9, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalyst, with ammonia, for methylmercaptan addition with acrolein)
IT 135-88-6
RL: CAT (Catalyst use); USES (Uses)
(catalyst, with ammonium bicarbonate, for addition reaction of methylmercaptan with acrolein)
IT 144-55-8, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalyst, with ammonium chloride)
IT 12125-02-9, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalyst, with sodium bicarbonate, for methylmercaptan addition with acrolein)
IT 7664-41-7, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts, with carbon dioxide, for methylmercaptan addition with acrolein)
IT 1066-33-7
RL: CAT (Catalyst use); USES (Uses)
(catalysts, with phenylnaphthylamine, for methylmercaptan addition with acrolein)
IT 74-93-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction of, with acrolein, catalyst for)
RN 74-93-1 HCPLUS
CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



IT 107-02-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction with methylmercaptan, catalysts for)
RN 107-02-8 HCPLUS
CN 2-Propenal (9CI) (CA INDEX NAME)



IT 3268-49-3P
RL: PREP (Preparation)
(by addition reaction of methylmercaptan with acrolein, catalyst for)
RN 3268-49-3 HCPLUS
CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



L34 ANSWER 25 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
AN 1975:16324 HCPLUS
DN 82:16324
ED Entered STN: 12 May 1984
TI .beta.- (Methylthio)propionaldehyde
IN Sizov, S. Yu.; Sukhanov, S. V.; Rykov, V. K.; Shustov, V. I.; Tsarenko, S. V.
PA Volzhskii Plant of Organic Synthesis
SO U.S.S.R.
From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1974, 51(34), 63.
CODEN: URXXAF
DT Patent
LA Russian
IC C07C
CC 23-14 (Aliphatic Compounds)
FAN.CNT 1

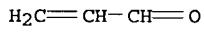
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI SU 443029 T 19740915 SU 1972-1819472 19720810 <--
 PRAI SU 1972-1819472 A 19720810 <--
 CLASS
 PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

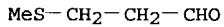
 SU 443029 IC C07C
 AB MeSCH₂CH₂CHO (I) was prepared by treating acrolein with MeSH in an organic solvent (e.g., I) in 1:1 I-MeSH ratio.
 ST methylthiopropionaldehyde; thiopropionaldehyde methyl; propionaldehyde methylthio; acrolein addn methylmercaptan
 IT 74-93-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with acrolein)
 IT 107-02-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with methanethiol)
 IT 3268-49-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 IT 74-93-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with acrolein)
 RN 74-93-1 HCPLUS
 CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



IT 107-02-8, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (addition reaction with methanethiol)
 RN 107-02-8 HCPLUS
 CN 2-Propenal (9CI) (CA INDEX NAME)



IT 3268-49-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 3268-49-3 HCPLUS
 CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



L34 ANSWER 26 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 1975:16319 HCPLUS
 DN 82:16319
 ED Entered STN: 12 May 1984
 TI 3-Methylmercaptopropionaldehyde
 IN Koberstein, Edgar; Mueller, Klaus; Theissen, Ferdinand
 PA Deutsche Gold- und Silber-Scheideanstalt vorm. Roessler
 SO Ger., 3 pp.
 CODEN: GWXXAW
 DT Patent
 LA German
 IC C07C
 CC 23-14 (Aliphatic Compounds)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2320544	B1	19740912	DE 1973-2320544	19730421 <--
DE 2320544	C2	19750605		
US 4048232	A	19770913	US 1973-399127	19730920 <--
SU 505357	D	19760228	SU 1974-1996514	19740218 <--
DD 110862	C	19750112	DD 1974-176862	19740228 <--
ES 423736	A1	19760416	ES 1974-423736	19740228 <--
GB 1400702	A	19750723	GB 1974-9296	19740301 <--
NL 7404691	A	19741023	NL 1974-4691	19740405 <--
BR 7402784	A0	19741105	BR 1974-2784	19740408 <--
CH 582665	A	19761215	CH 1974-5019	19740410 <--

RO 68025	P	19801230	RO 1974-78468	19740418 <--
BE 813990	A1	19741021	BE 1974-6044553	19740419 <--
FR 2226393	A1	19741115	FR 1974-13752	19740419 <--
JP 50012012	A2	19750207	JP 1974-44369	19740419 <--
AT 7403268	A	19751215	AT 1974-3268	19740419 <--
AT 331773	B	19760825		
IT 1005995	A	19760930	IT 1974-50485	19740419 <--
CA 1005460	A1	19770215	CA 1974-197828	19740419 <--
SE 397344	B	19771031	SE 1974-5321	19740419 <--
PRAI DE 1973-2320544		19730421	<--	

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

DE 2320544 IC C07C

AB CH₂:CHCHO reacted with MeSH in the presence of hexamethylenetetramine catalyst to give 99.0-99.8% MeSCH₂CH₂CHO.

ST acrolein methanethiol addn catalyst; propionaldehyde methylthio

IT Addition reaction catalysts
(hexamethylenetetramine, for acrolein with methanethiol)

IT 74-93-1

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction of, with acrolein, catalysts for)

IT 107-02-8, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction of, with methanethiol, catalysts for)

IT 100-97-0, uses and miscellaneous

RL: CAT (Catalyst use); USES (Uses)
(catalysts, for addition reaction of acrolein with methanethiol)

IT 3268-49-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 74-93-1

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction of, with acrolein, catalysts for)

RN 74-93-1 HCPLUS

CN Methanethiol (8CI, 9CI) (CA INDEX NAME)

H₃C—SH

IT 107-02-8, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction of, with methanethiol, catalysts for)

RN 107-02-8 HCPLUS

CN 2-Propenal (9CI) (CA INDEX NAME)

H₂C=CH—CH=O

IT 3268-49-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 3268-49-3 HCPLUS

CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)

MeS—CH₂—CH₂—CHO

L34 ANSWER 27 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN

AN 1975:16318 HCPLUS

DN 82:16318

ED Entered STN: 12 May 1984

TI .beta.-Methylthiopropionaldehyde

IN Kojima, Takeshi; Horisawa, Toshiharu; Shimasaki, Masami; Ito, Ryoichi

PA Kanegafuchi Chemical Industry Co., Ltd.

SO Jpn. Tokkyo Koho, 2 pp.

CODEN: JAXXAD

DT Patent

LA Japanese

IC C07C; B01J

CC 23-14 (Aliphatic Compounds)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 49024890	B4	19740626	JP 1970-82267	19700919 <--
PRAI JP 1970-82267		19700919		<--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 49024890 IC C07CIC B01J

AB Amino acids catalyzed the addition of MeSH (I) to CH₂:CHCHO (II). Thus, 56 g II were added to 48 g I containing 0.5 g methionine at <40.degree. over 60 min to give 93.6 g MeSCH₂CH₂CHO.

ST addn methanethiol acrolein catalyst; methionine catalyst addn acrolein methanethiol; amino acid addn catalyst

IT Addition reaction catalysts
(amino acids, for methanethiol with acrolein)

IT Amino acids, uses and miscellaneous

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for addition reaction of methanethiol with acrolein)

IT 74-93-1

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction with acrolein, catalysts for)

IT 107-02-8, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction with methanethiol, catalysts for)

IT 63-68-3, uses and miscellaneous

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for addition reaction of methanethiol with acrolein)

IT 3268-49-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 74-93-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(addition reaction with acrolein, catalysts for)

RN 74-93-1 HCPLUS

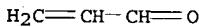
CN Methanethiol (8CI, 9CI) (CA INDEX NAME)



IT 107-02-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(addition reaction with methanethiol, catalysts for)

RN 107-02-8 HCPLUS

CN 2-Propenal (9CI) (CA INDEX NAME)



IT 3268-49-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 3268-49-3 HCPLUS

CN Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)



L34 ANSWER 28 OF 28 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 1975:16317 HCPLUS
 DN 82:16317
 ED Entered STN: 12 May 1984
 TI S-Substituted mercaptopropionaldehyde
 IN Ito, Hiroo; Kimura, Kaoru; Sato, Masakatsu; Yamada, Akira
 PA Toa Gosei Chemical Industry Co., Ltd.
 SO Jpn. Tokkyo Koho, 3 pp.
 CODEN: JAXXAD
 DT Patent
 LA Japanese
 IC C07C; B01J
 CC 23-14 (Aliphatic Compounds)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 49024454	B4	19740622	JP 1970-43680	19700523 <--
PRAI	JP 1970-43680		19700523	<--	
CLASS					
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES			
JP 49024454	IC	C07C1C	B01J		
AB	The addition of RSH (R = alkyl) to R1CH:CR2CHO (R1, R2 = H, alkyl) to give RSCHR1CHR2CHO was promoted by strong acid catalysts, which activated the double bond by protonating the CO group. Thus, CH2:CHCHO was added dropwise at 0-6.8.degree. to MeSH and HCl, then held 1 hr at 30.degree. to give 86.5% MeSCH2CH2CHO.				
ST	addn thiol acrolein catalyst; aldehyde alkylthio				
IT	Thiols, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (addition reaction with .alpha.,.beta.-ethylenic aldehydes, catalytic)				
IT	Acids, uses and miscellaneous RL: CAT (Catalyst use); USES (Uses) (catalysts from strong, for addition reaction of thiols with .alpha.,.beta.-ethylenic aldehydes)				
IT	Addition reaction catalysts (strong acids, for alkane thiols with .alpha.,.beta.-ethylenic aldehydes)				
IT	Aldehydes, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (.alpha.,.beta.-ethylenic, addition reaction with thiols, catalytic)				
IT	74-93-1 RL: RCT (Reactant); RACT (Reactant or reagent) (addition reaction with acrolein)				
IT	107-02-8, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (addition reaction with methanethiol)				
IT	7647-01-0, uses and miscellaneous RL: CAT (Catalyst use); USES (Uses) (catalysts, for addition reaction of methanethiol with acrolein)				
IT	3268-49-3P 19378-51-9P RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)				
IT	74-93-1 RL: RCT (Reactant); RACT (Reactant or reagent) (addition reaction with acrolein)				
RN	74-93-1 HCPLUS				
CN	Methanethiol (8CI, 9CI) (CA INDEX NAME)				

H₃C—SH

IT	107-02-8, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (addition reaction with methanethiol)
RN	107-02-8 HCPLUS
CN	2-Propenal (9CI) (CA INDEX NAME)

H₂C=CH—CH=O

IT	3268-49-3P RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)
RN	3268-49-3 HCPLUS
CN	Propanal, 3-(methylthio)- (9CI) (CA INDEX NAME)

MeS—CH₂—CH₂—CHO

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